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Tropical Life:

A Monthly Journal devoted to the Interests of those living, trading, holding property, or otherwise interested in Tropical and Sub-Tropical Countries.

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New Year's Greetings.

WE are undoubtedly faced with a strenuous time to keep the world supplied with machinery and manufactured goods during 1920. The Tropics have not yet been afflicted with that dread disease, "Restriction of Output," except, as with rubber, to help the fight of right against might. In Europe "restriction" tends to encourage Prussianism. One can only hope for the best and that those who are giving of their best to help may enjoy the health and determination that we shall all need to make headway.

On our side we have never had so many friendly greetings covering so extended an area. Kind remarks and congratulations on our articles in TROPICAL LIFE as well as in other papers to advance the interests of the Tropics continue to come in from all parts of the world, especially from the Far East. Our best thanks to you all for such friendly encouragement.

"Greetings and all good wishes for the New Year," wrote Mr. Henry C. Pearson, editor of the *India-Rubber World*, of New York.

"Your New Year wishes are warmly reciprocated," writes the Director of Kew. "There are tough times ahead I know, but with men like yourself influencing public opinion, we ought to be able to weather the gale."

In his New Year letter, one of our best friends in India concludes his comments on the position of sugar over there by saying, "Your book, 'The High Price of Sugar,' has obviously had an effect on the Indian market."

Other letters are from Mr. L. C. Brown, in Malaya, from Japan, Australia, New Guinea, the West Indies, West Africa and Brazil, winding up with a "card" from Hammond Island, Torres Straits (North Australia), being a photograph of a local dance, showing the natives with long grass skirts and white paper faces and arms where their own heads should appear.

On this side we have to thank the Atlas Preservative Co., Ltd., for the New Year's calendar; attractive to look at, useful to own, and of interest to watch day by day.

An International Tea Congress will take place, we understand, in Batavia early in 1921. It was to have been held last May, but had to be postponed owing to war conditions. Tea men, the *Indian Planters' Gazette* tells us, from all parts of the world, are expected to attend. Cultural and manfacturing machinery will be on show and provide a prominent feature of the show. Demonstrations showing how tea is grown, manufactured and brewed in every country will also be an important item. Dr. J. J. B. Deuss, Buitenzorg, Java, is to be the secretary of the Congress.

The Fermentation of Cacao.—Part II.

HOW THE CACAO IS OXYDIZED.

(*Continued from the November issue, p.* 174.)

"In reply to your postcard of August 1st I am afraid I do not understand what you mean by the cells being emptied as stated in the footnote of p. 122 August issue. If you are quoting someone else's opinion I think you have not got it quite right. If the cells were emptied there would be no bean left."

"I think all are agreed that to obtain a brown colour, which is one of the effects of fermentation, oxidation is necessary. All are agreed that for this oxidation the presence of three subtances is essential:—

1. The tannin to be oxidized.
2. Oxygen.
3. An enzyme which encourages the oxidation.

"All these occur in the cacao bean as it comes from the pod, but why oxidation occurs so much better in a fermented bean than in a bean which is simply dried is not very clear. If you cut an apple it goes brown owing to the action of oxygen absorbed from the air, but as long as the apple is uncut and unbruised it remains white. If you take a cacao bean from the pod and cut it the exposed surface goes brown, but if you ferment the bean the whole of it gradually goes brown without being cut. My observations lead me to believe that the bean does not become oxidized until it is killed, that is, until it is no longer capable of germination. It can be killed by raising the temperature, by fermentation or otherwise, or as Dr. Fickendey has shown, by cooling to almost freezing temperature. It may be that killing the bean makes its skin and cell walls more permeable to oxygen, but my theory is that when the bean is killed disintegration or weakening of the cell walls occurs, and, as a result, the enzyme and tannin *hitherto separate* become mixed, and hence able to actively absorb oxygen."

Writing a few days later Mr. Knapp went on to say when speaking of the cells being emptied, that "the scientist tells the planter one of the principal differences between the unfermented and the fermented bean is, that in the fermented bean the tannins have been oxidized, and hence the colour of the bean has become brown and the taste less bitter."

"You inquire in the footnote, how the oxygen gets in, and suggest that the only way in which it could get in would be for the cells to be partially emptied of their contents so as to leave spaces into which the air could get. You then inquire how the air can get in if the cells are full, and the reply is, by the oxygen being dissolved in the liquid content of the bean. If you mix up some of the crushed cacao bean with water and place it in a tube, the liquor begins to go brown at the surface and gradually becomes brown throughout the vessel, the oxygen having been continuously dissolved in the water. However, in this experiment the greater the surface exposed to the air the more rapid is the browning. So with the cacao bean, if you can increase the surface exposed to the air the browning will take place more rapidly, thus, for example, if all the beans were cut in half the speed at which they became brown would be increased. If, as you suggest, we ferment to empty the cells, fermentation is a failure, for actually when fermentation is complete, the cells as seen under a microscope are as full as before, and the bean as a whole has actually sucked in liquid from the outside and has become much plumper and fuller than it was before fermentation. On drying, however, the skin which has been expanded wrinkles up on contracting and no longer fits tight to the bean, and the cotyledons having been thrust apart by the liquid no longer hold together so closely, hence, on drying, large interspaces are produced which doubtless allow the air to circulate more freely and expose a greater surface of the bean to the action of oxygen. Seen under the microscope the cells have contracted but are as full as before."

"As the liquids in all living matter contain dissolved oxygen, the problem as it presents itself to me is to account for the fact that the tannin in the unfermented bean remains unoxidized, whilst that in the fermented bean is readily oxidized."

"In my opinion the most important action which occurs during fermentation is the rendering of the bean pervious to water, which, in distributing itself throughout the bean, dissolves the isolated masses of tannin and spreads it evenly throughout the bean, so that it encounters and becomes mixed with the enzymes. As far as I know this is quite a new statement of the case, and some day I may expound it at greater length."

"You will see that I agree with you that it is during drying that the major part of the oxidation of the tannin occurs, but it is my belief that if you prick holes with a pin in an unfermented bean and then dry it, it would not go brown throughout."

REFERRING to our remarks last month in the sketch (p. 192) of Mr. A. W. Knapp as "Our Friend," we should be glad to learn that he contemplates a second visit to Trinidad. So much has happened since 1913, so much will happen in the course of the next year or two, that any help given or any information obtained by such a visitor can but benefit both the West Indies and the manufacturers over here. To begin with, in 1913 the question of the fermentation of cacao was hardly ever discussed, whereas to-day, thanks to Mr. Knapp as much as to anyone, the question has become very much alive, and having crept into the front ranks it shows no signs of retiring into the rear again.

In 1913 the bulk of the planters were still a little in the dark as to what kind of cacao exactly manufacturers were most in need of. They know more of their lesson now, so it is time the "Inspector" went round to teach still more and be taught in his turn. As an outcome of the visit already taken, it will be remembered that Mr. Knapp, in collaboration with Mr. Booth, contributed a paper to the International Congress of Tropical Agronomists in 1914 on "The Qualities of Cacaó desired by Manufacturers," and that he recently contributed some notes to the *West India Committee Circular* on the same subject.

To show how alive the Gold Coast officials are to-day —over five years after that paper was read—to what the above parapraph warns us against, we will quote an extract (paragraph No. 23) from p. 4 of the Annual Report of the Department of Agriculture for Southern Nigeria for 1918, which tells us (Mr. W. H. Johnson, the Director of Agriculture, probably being the writer):

"I inspected the beans of members, who were still desirous of shipping their cacao to England. In each case the cacao was inferior in quality to that which had previously been sold by the members as well-fermented cacao; it was not uniform in character, it had not been properly stored, and much of it was badly wevilled and mouldy. I accordingly advised the (Ibadan Agricultural) Society that they should not risk their reputation by shipping cocoa of this quality." Probably it was sold locally, for some at least was shipped, whether mixed with better beans, to "pull-up" the quality, we cannot say. In a previous paragraph another evil that the shipper of good cacao (and also the buyer) has to contend with is clearly brought to light. "Shipping space could not be found. Many disposed of their cacao locally. One middleman took advantage of the reputation which the Society's cacao had obtained and purchased and sold forty tons of cacao, some of which was much inferior in quality. As a result, the merchant who bought the cacao pointed out to me the harm which was likely to result through members of the Society acting in such a way." Accra is not the only place that has its overkeen men, and it is only those who have been local buyers that can realize the tricks of deliberately dishonest sellers.

"I HAVE already given a detailed account of the New Hebrides in a book entitled 'France and England in the New Hebrides,'" Mr. Jacomb tells us in his introduction. "Here I discuss more general questions and principles. I think, however, that I ought to say two things very plainly. The first is, that if the present state of affairs in that unhappy Group is to be fully dragged out into the light of day, there is only one way of doing it, and that is by means of a Commission with powers to inspect all official records, both British and French. And its chief point of inquiry should be this. What is the death-rate amongst Kanaka labourers on European plantations? Every native indentured since the inception of the Anglo-French Condominium on December 2nd, 1906, should be traced systematically. The second is that it is the universal desire of the natives of the New Hebrides to pass under the British flag. There can be little doubt that the disastrous experiment of the Condominium will, in the present general settlement of the world, be brought to an end. If that be so, it will pass either to Britain or France. Should it pass to France, it will be in defiance of the principle of self-determination of little races for which the Great War has been fought and won, and the settlement will not be a final one. Sooner or later, the Group must pass to Australia. If it be later, it will pass empty of a native population. Therefore, let it be sooner."

Mr. Edward Jacomb's latest book "The Future of the Kanaka" (6s. net, postage 6d. Crown 8vo. P. S. King and Son, Ltd., Great Smith St., S.W.), deals with a trouble that ought never to have existed and which, in spite of all we have heard of late, seems likely to continue indefinitely. One wonders why? Now that this little book has appeared, a few men who can make a move in the matter will perhaps have the miserable case of the Kanakas brought before them sufficiently prominently to cause them to move in the matter, especially whilst labour is so short.

Froghoppers and Sugar-Cane.

REPORTS state that the new leaf-hopper parasite obtained in Formosa is spreading rapidly throughout the plantations in Hawaii, and there is good reason for believing it will prove of great assistance in further checking the spread of the pest.

Froghoppers are not the only cause of the serious loss of the sugar crop in Trinidad, according to Mr. William Nowell, mycologist to the Imperial Department of Agriculture, who visited the island earlier in the year. Sir Francis Watts, in a letter to the Governor, forwarding the mycologist's report, states that when Mr. Nowell's services were asked for, the investigations, which had been in progress for some time, had reached a stage when it was felt that other factors than the presence of froghoppers were at work causing the serious loss of the sugar crop which was complained of. Mr. Nowell's investigations fully confirmed this impression; he finds that the position is complicated by the presence of fungus root disease of the canes. But his observations more particularly go to show that the diseased conditions generally met with are attributable mainly to defective methods of agriculture, and that froghopper and root disease are to be combated rather by general methods of agricultural improvement than by application of specific remedies. The lack of fertilizers, at any rate in the West Indies, has also caused the decrease to be heavier than it otherwise would have been, especially if, during such a drought as the islands have gone through, nitrate of soda could have been used on an adequate scale as in Hawaii where the output for last crop (1918) is returned as having worked out at 576,842 tons of 2,000 lbs., against 644,574 in 1917 and an estimated output of 600,000 tons for this year. The yield per acre in 1918 worked out at 6·209 tons of sugar per acre on irrigated lands, and 3·137 on unirrigated areas. The average yield is put down at 4·820 tons. The serious falling off in the West Indian output of sugar for this crop and the aggravation of the trouble through the planters being unable to secure the necessary supplies of manures, was also mentioned by Mr. Sandbach Parker at the Mincing Lane (Clothmakers' Hall) Conference mentioned last July, p. 100.

YOKOHAMA is congratulating itself because published figures show that her combined import and export trade for the six months ending June 30th had increased *yen* 62,862,277 over 1918, the full returns being *yen* 665,222,725, including exports of raw silk, *yen* 196,026,093, as compared with *yen* 602,360,448. Kobe, on the other hand, shows a falling off, as her trade for the same six months fell from *yen* 729,273,296 last year to *yen* 710,996,642 this half year, including imports of wool, *yen* 262,516,523. To-day the total population of Japan, the *Journal* of the Yokohama (Japanese) Chamber of Commerce tells us, exclusive of Chosen, Formosa and Karafuto, was 57,784,935 on December 31st last, not counting troops or bluejackets on the active list. Out of this Tokyo has 2,331,860 inhabitants, Yokohama 446,097, and Kobe 591,393.

The Japanese in South America.

MANY of our readers having to do with Brazil, especially those living in that country, have been prejudiced against our now well-known and much-read book "The Rubber Industry of the Amazon," price 21s. net (including interesting letters from Lord Bryce and the late Colonel Roosevelt), because it claims that without the introduction of Chinese and Japanese settlers into the country districts, that Republic of magnificent but undeveloped agricultural and other resources will never become opened up and developed as she should be if she wishes to become a leader among the nations of the world. Japan occupies such a position in the East, and Brazil could, but for her lack of population, be equally powerful and prominent in the West. To be so, however, she must go East for help, not only to secure immigrants, but immigrants of a class that can inter-breed with the Indians and starting at the bottom as peasants, work upwards as farmers, cattle-breeders, &c., and thus, while increasing the local food supplies, so badly needed by Brazil, especially the rubber area of the Amazon, these settlers from the East would gather wealth to themselves.

When we started to compile the data for the book, we had no idea of what had already been done to bring about the introduction of Japanese immigrants into Peru, Bolivia and especially into Brazil. We simply used our knowledge of the races of the two centres, and proposed a plan, worked out to the smallest detail, showing how the Eastern workers could be sent West, and what the West could do for them on their arrival.

When the book appeared we were told it would spoil our well-established popularity in Latin-America. Our answer was that, as we felt that that continent must come to the same decision as we had, much as we would regret having a black mark put against us by our friends over there, we would still publish the book as we felt it would be for their benefit in the end.

So the book appeared and with it many surprises. Certainly it brought us black looks and pungent epistles but it also brought us a surprisingly large number of congratulatory letters, with cuttings and photographs, showing what had already been done along the lines advocated by us, and above all what it was proposed to do as soon as the war was over and the emigrant boats could once more run between Japan and Latin-America. "Surely," we asked one critic at the time, "if we have done wrong in issuing a book advocating the introduction of the Japanese, especially, into Brazil and Spanish America, we can claim to have erred on the right side and in good company, since those who control the destinies of these Republics are already doing what we called for, and have made more progress than we dared hope for."

No wonder that now the war is over and increased numbers of Nipponese emigrants are finding their way out West, that "The Rubber Industry of the Amazon" is becoming more popular and more widely read. Before next year comes to an end we anticipate that more than double the number of copies already sold will have passed into other hands, and maybe three times the number. We hope this will be the case, since the book deals generally with the opening up of those fertile lands and the regulation of its industries in order to add to the permanent wealth of the Republics.*

Like North America, much wealth has passed from Europe to Latin-America, but as easily as it went in so can it come out, especially when the Germans batten on that continent as they did before the war. Before the wealth does pass from them therefore, South America and Brazil in particular should leave no stone unturned to open up the continent and develop permanent industries established by those who have come to stay instead of by birds of passage, often mere birds of prey from Central Europe.

The latest cutting sent us comes from Peru and shows the progress being made there with the help of the Japanese. If Brazil is equally enterprising, she can add immense available but undeveloped wealth to herself, and at the same time add to the strength of her political position throughout the world.

In an interview with Mr. Hadau Saito, Japanese Consul in Lima, which was published in *La Prensa*, October 31, we were told, on the occasion of the Japanese national holiday, the Consul estimated the total number of Japanese in this Republic at 6,000, including those born there. The number of Japanese entering Peru in 1918 was 1,516 and so far this year there have been 1,148 immigrants.

There has recently been considerable agitation through the columns of *El Tiempo* against Japanese immigration into Peru, based largely on the incident afforded by the sale in February last of some 800,000 acres of *montaña* land along the Huallaga river to the Hoshi Pharmaceutical Co., of Tokio. Full details of this transaction were published in the Peruvian press at the time, and since these notes we have received further details which appear in our Supplement. It has been taken for granted by the local press that the Hoshi company has under consideration an extensive colonization scheme although the representatives of the company here have pointed out that this mountainous jungle country is not suitable for colonization on a large scale. The main reason for the purchase of the land was to exploit the medicinal plants, principally cascarilla from which quinine is extracted, and which grows in profusion throughout this region. Undoubtedly a certain amount of inspiration for this campaign against Japanese immigration has been due to the fact that Dr. Augusto Durand, now an exile and politically opposed to *El Tiempo*, was interested in the sale of the land, the principal owner of which was Sra. Juana Martins vda. de Fernandez.

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* Those who possess the second repriut of our book will remember that we include a collection of photographs merged into one large one. This was inserted to face p. 184, and shows Japanese settlers at home in Brazil and the excellent progress that they have made in a comparatively short period. In the book itself, chapters ix, x, xi and xix are specially given up to discussing the suitability of the Japanese (as of the Chinese) as settlers in Brazil and Latin America, judging by the work they have already done elsewhere, and why and how this experience should enable them to make a sure and comparatively rapid progress in South America, provided a sufficient number go to form well-established and self-supporting colonies at the start.

Letters to the Editor.

To the Editor of TROPICAL LIFE.

SIR,—Those who, like myself, are contemplating four years or more of study to prepare for research work in connection with tropical agriculture, cannot but be attracted by a booklet issued by one of our foremost scientific colleges (if it has passed through their hands), especially where it alleges that, "The combined knowledge of botany and chemistry gives good openings for men, especially on rubber plantations, which, at present, can scarcely secure the assistance they need."

Will those needing this assistance, if the statement is correct, kindly say:—

(1) The salaries to be paid, and especially if at the start it is sufficient for a steady and willing worker to live decently on. I mean decently, not extravagantly.

(2) The future prospects of men capable of and keen on doing research work. Are they encouraging? Paraphrasing the Mikado, "Will the remuneration fit the work, and benefits arising from such work"?

I have had over twenty years' engineering training although still only 36 years of age, and held before and during the war some fairly responsible positions. Systematic studies of British mosses is an old hobby of mine, this is a subject somewhat akin to mycology.

Any offers for my services?

Yours faithfully,

"POLYTRICHON ALOIDES"

(*Otherwise a Lieut. in the R.A.F.*).

Aboukir,

Egypt.

A SUBSCRIBER writes: "Have you seen the booklet, issued by the Cromlix Rubber Estate and Produce Syndicate, Ltd., which has been specially compiled, as its name tells you, to give "A Few Hints about Malaria, its Causes and Prevention, to New Arrivals in the Tropics." It can go in the space of two railway tickets, and costs nothing except a stamp. If anyone thinks themselves too superior to trouble to write for a copy, and contracts malaria—well, don't send them to me for pity." As we agree with our subscriber, we will give the address of the Secretary of the Cromlix Rubber Estate, Ltd., which is c/o Messrs. Walker Bros., Ltd., 36, Basinghall Street, E.C.2.

The British School of Milling and Laboratories of Cereal Chemistry.*

To the Editor of TROPICAL LIFE.

DEAR SIR,—I have entirely given myself up to the studying and teaching the science and practice of cereal chemistry. We are to have a new mill, and the laboratories and buildings (at Grange-over-Sands, Lancs) have been converted into the School—the only School in England—of Milling for the benefit of the sons and relations of master millers. When all is complete, so far as the stdents are concerned, they will be able to attend terms just like any other educational or training institution in the country. The School has the approval and support of the National Association of British and Irish Millers, our method of teaching being practically based on their recommendations. Under the circumstaces, therefore, I must drop my advertisement in TROPICAL LIFE, as I cannot, unfortunately, continue my research work in connection with vegetable oils, cacao, paper and paints. Thanking you for your attention.

I beg to remain,

Faithfully yours,

J. STEWART REMINGTON.

Why not a Gold Coast Team for the West Indies?

ACCORDING to *West Africa* hopes are high on the Gold Coast that the new Governor (General Guggisberg, D.S.O.) will take up the threads of his old plan in regard to the despatch of cricket teams to England from West Africa where he left them off some years ago when he was transferred to Egypt. General Guggisberg played at Lord's himself, and a wish near to his heart was that England should see what West Africans could do in the way of sport. Other parts of the Empire have been in the sporting limelight at home often enough, so those who wish West Africa to have her share are hoping that the scheme will mature in the near future.

This is good, so far as it goes, but what we should like to see is for such a team to visit the various islands in the West Indies, and for a return team sent to West Africa later on. Whether the teams are black or white, would make no difference unless for the betterment of both Colonies which have much in common, and the visit of the dozen or dozen and a half men from one Colony to the other would show them what the others were doing, not only in sport but in planting and business as well, and the knowledge thus acquired would be passed on to others "when the boys get home."

THE result of Japan's foreign commerce during the first three quarters of last year is noteworthy in various ways. The factors which have contributed to the swelling of the adverse trade balance are particularly interesting, as they reflect the economic condition of Japan before and after the signing of the Treaty.

Published statistics show that raw silk heads the list of exports. The second place is occupied by cotton fabrics. The third place is occupied by silk fabrics. Cotton yarns have fallen to the fourth place. A noteworthy change in the latest lists is tea, which has been one of the biggest items in the export list of Japan so far, but is now even below porcelain or lumber. The official review states that stocks of the lower grade tea which has been exported to the United States since 1917 are now accumulated heavily in the United States and very few American tea manufacturers have any interest in those grades this year. Normal interest has been shown by American tea merchants in the higher grades, but they have often been prevented by the rapid advance in the price from buying freely.

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* So many people have asked us from time to time where they could obtain a scientific knowledge of wheat and flour milling, that the following letter, sent purely out of good-will and not to advertise the above school, may be of interest.

The Brown Bast Disease of Hevea and its Cause.—Part II.

(*Continued from December issue, p.* 191.)

ACCORDING to Dr. Bobiloff, in considering the cause of Brown Bast one has to consider two possibilities—either Brown Bast is a disease brought about by organic infection, or it is a physiological phenomenon.

During the course of investigation into Brown Bast and its cause, different investigators have more or less definitely stated the probability of Brown Bast being caused by an organism, though no one succeeded in isolating a micro-organism from the deceased tissue, nor could anyone bring about the disease in healthy tissues by the transference of affected tissues into these healthy tissues.

The *Malayan Tin and Rubber Journal* of March, 1919, gave an account of a meeting of the Brown Bast Investigation Committee of Malaya, in which the following was stated:—

"Messrs. Belgrave, Perry and Richards reported that it has still proved impossible to discover a micro-organic cause for the disease, and that it was not possible to set up the symptoms of the disease, either by the transference of diseased bark to open wounds on healthy trees or to healthy bark on trees affected with the disease."

The principal advocate of the organic cause of Brown Bast was Rands. At a meeting of the Rubber Planters' Association, held at Bandoeng on February 26th, 1919, he stated that Brown Bast was a disease due to an organism (infecti-sickte).

In the account of this meeting, which appeared in the *Ned. Ind. Rubbertydschrift* of March 15th, 1919, his opinion was given as follows:—

"He has, by different investigations, obtained such data as to indicate that Brown Bast was due to an organism (infecti-sickte).

"He had carried out inoculation experiments by making superficial wounds, 5 cm. by 1 cm., in the cortical layers of healthy trees, and inserting in these wounds pieces of diseased tissue.

"This resulted in different cases in the spreading of the disease."

Further on, Rands opinion was again given as:—

"The affection, however, is certainly due to an organism (infecti-sickte)."

Since then, however, Rands has obviously changed his views, for, in a publication by him, given in the April number of his journal, he now states the following:—

"I attempted to isolate an organism. This I did not succeed in doing, and I could obtain no more positive results with the inoculation experiments. A new series of experiments were commenced, having for their object to trace whether the intercellular substance commenced in consequence of a cause which was not of a parasitic nature."

Harmsen was first to bring out the possibility of Brown Bast being due to a physiological cause. According to him, Brown Bast is a disease which makes its appearance in consequence of the emptying or exhaustion of the tissues through the withdrawal of the latex from the bast. Harmsen obtained this idea from practical observations and microscopic investigations on attacked bast.

In order to be able to state that Brown Bast is a physiological phenomenon, an experimental proof of the fact is necessary. Such an experimental proof, however, of the physiological cause was not made by Harmsen.

The following describes an experiment, the *Planters' Chronicle* goes on to say, from which it was evident that Brown Bast has physiological cause:—

If Brown Bast really arises in consequence of a large withdrawal of latex from the trees, then it must be possible to produce Brown Bast experimentally. On ten trees, rectangular pieces of bark 55 cm. broad and 27 cm. long were isolated from the surrounding bark by deep channels, which penetrated to the wood. Supplies of latex from the above, from below, or from the sides were thus kept out. Across the whole breadth of the isolated pieces of bark tapping cuts were made from left to right, and these cuts were tapped daily. The latex which flowed from these cuts thus was only able to come from the isolated patches of bark. There is thus a direct withdrawal of latex, which is in a limited portion of bark. The experiment was commenced on February 22nd. After one and a half months eight of the isolated patches of bark were dry, while in two of the trees the flow of the latex had fallen below average. Specimens of the bark were taken now from all the ten isolated patches of bark near the margin of the tapping cut. Microscopic examination of these showed that in all, to a greater or less extent, Brown Bast was present, viz., in three trees there was a very fair amount; here the Brown Bast was observed to be especially developed in the vicinity of the lactiferous tissues. In two trees there was less. In three trees very little; here merely single cells in the delicate bast tissue were attacked. In two trees which still yielded latex were seen the earliest signs of Brown Bast.

The appearance of Brown Bast in different degrees in this experiment shows that some trees are more susceptible to Brown Bast than others. The degree of susceptibility for Brown Bast by trees would seem to be probably dependent upon their physiological conditions. No Brown Bast could be ascertained in the tissues external to the isolated patches. It was well observed that the delicate bast layer did not look full of vitality.

That the trees were attacked with Brown Bast was established by microscopic investigations by the use of the phloroglucine reaction. By this treatment, in which phloroglucine in hydrochloric acid was applied to the diseased bark, the intercellular masses and the middle lamellæ of the walls of the attacked cells were coloured red. This reaction to show Brown Bast was first applied by Harmsen.

On p. 485 the Bangalore paper goes on to say:—

"The first sign of the appearance of Brown Bast, which can generally be observed externally, is the brown local discoloration in the bast. One can show microscopically that in the intercellular and middle lamellæ there is present a product of a granular consistency. Basing his idea upon the result of the phloroglucine, phenol, resorcin and naphthol re-

actions, Harmsen considers this product to be lignin. Against this opinion Rands, however, maintains that this substance must be looked upon as a gum, though for this he gives no proof. It is, indeed, not so easy to give any positive reaction for gum, for there is no special gum reaction. (It does not seem to us necessary to reproduce here the argument relating to gum reaction.—Ed., *P.C.*)."

Dr. Bobiloff continues: "I have supported Harmsen in the physiological theory of Brown Bast without entering into details of his investigations, but warning him against coming to rash conclusions. From the above-mentioned reaction products of the intercellulars, it can be stated that Harmsen may have been partly correct with regard to the lignification. It is certain that a vessel predisposed towards Brown Bast generally has the capacity of lignifying, and that this vessel in certain stages does not only show the decomposition of the intercellulars, but also abnormal stone-cell formation then takes place. The stone-cell formation is the setting out of the lignin membranes. With the appearance of decomposition products in the intercellulars and middle lamellæ, those cells also which are situated in the vicinity of the latex may become stone-cells at the same time. This is a fact, according to Harmsen."

The summary of the paper continues:—

Either Brown Bast disease is caused by infection, or the cause is physiological.

It is, of course, necessary to give an experimental proof concerning the physiological theory.

Out of a number of Hevea trees, ten were chosen, and pieces of bark 55 cm. long and 27 cm. broad were cut in each tree.

After this was done the flow of the latex to the isolated pieces of bark from the neighbouring bark, from above, from below and from sides, becomes impossible.

The isolated pieces of bark were then tapped, and after six weeks every piece showed signs of Brown Bast disease. This can only be explained by the drawing out of the latex from these isolated pieces of bark.

It is possible to summarize the knowledge about Brown Bast as follows:—

(1) The cause of Brown Bast disease is physiological. Harmsen is the first who has positively declared Brown Bast to be non-parasitical.

(2) As the disease develops, anatomical charges can be observed in the bark.

(*a*) The formation of Brown degenerate substance in intercellular spaces and middle lamellæ of the cortex cells. This degenerate substance gives the principal reactions for lignin. It has not yet been proved that this substance is gum, as Rands asserts.

(*b*) The abnormal formation of stone-cells.

(*c*) The formation of burrs.

(3) The slightest affection to the bark by Brown Bast disease can be shown by phloroglucine reaction; the intercellulars and middle lamellæ would be coloured red.

(4) The severity of the disease probably depends upon the physiological conditions of the trees; therefore one tree can be more affected by Brown Bast than another.

We could write much more on the subject, but at present it still seems *sub judice*, so we decline to declare judgment until those learned in the matter have fully tried the criminal and done the summing-up.

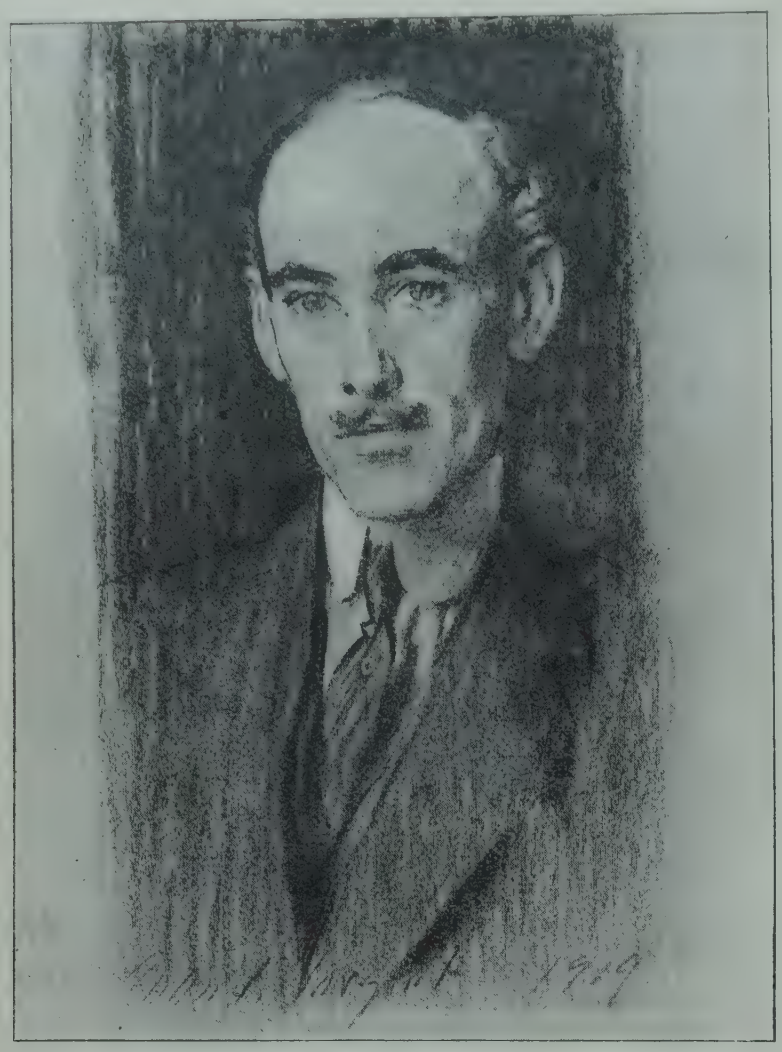
THE University of Ecuador, South America, has decided to confer the title of Emeritus Professor of the University on Dr. Hideyo Noguchi of Japan in appreciation of his research and discoveries relating to scarlet fever. The University also decided to put up a bronze plate in a hall of the University in his honour.

(*Continued from p.* 8.)

than a mere question of trading. Community of commercial interests is one of the first steps towards creating that knowledge of, and sympathy with each other which is required."

The unthinking ones of this Empire know nothing of the West Indies. They do not even know the Islands by name. He or she who knows of the Pitch Lake in Trinidad, the Roseau Valley in Dominica, or that Jamaica is not close to Barbados, is a person of great knowledge. We who know the Empire, including the West Indies, so well, have great difficulty to remember this. Sir Edward Davson's assistance during the past twenty or twenty-five years must have gone farther than it is possible to estimate, to help dispel this scandalous ignorance among all ranks and all ages of what we call the Great British Public. His travels, his lectures, his leading position among our Imperial economic legislators—Sir Edward is a member of many councils and committees, including those of the British Imperial Council of Commerce, and Royal Society of Arts—has placed great practical knowledge at his disposal, knowledge not gathered at one spot but over a wide area, the trade and commerce of the West Indies being the connecting link. "England has need of the West Indies," was the concluding remark of "Our Friend," when addressing a leading Chamber of Commerce in Canada, "and it now remains for the people of the West Indies to say whether they are prepared to take their place in the Empire allotted to them, or to remain in a state of stagnation. The opportunity lies in their hands—it only remains for them to grasp it."

We have known these islands during the whole of our half-century of life. Like the women voters in England, the West Indies will take time to feel their feet and make their power and influence felt throughout the Empire. That they—and also our women voters—will do so, and do so in the near future, no student of Imperial politics can for a moment doubt. When that time does arrive, this new epoch that we have been speaking of, may we still have Sir Edward Davson with us to point out the best route to take, as he has always done so willingly and so ably when the atmosphere has been dull and clouded over, not bright and prosperous as everything to do with the West Indies, sugar, cacao, or oil, is to-day.



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"Tropical Life" Friend.—No. 175.

SIR EDWARD DAVSON,

President of the Associated Chambers of Commerce of the British West Indies.

WE were glad to see that the issue of the *West India Committee Circular*, bearing the date of Christmas Day, included as a supplement a reprint of the paper read by "Our Friend" this month before the Royal Society of Arts on December 9th. Our contemporary further called attention, in a carefully worded leading article, to what that paper had to say on "Problems of the West Indies."

We made a special point of being present at the lecture and did not go alone. We wanted to have an entirely unbiased opinion of the lecture to confirm our own views, so took a friend with us who was not directly interested in the subject, but knew the West Indies fairly well. The experiment was quite successful for we both came to one conclusion, viz.: that the paper seemed to mark the end of one epoch, of dull times and musty ignorance, and clearly to open up the way to another to which appreciation and prosperity show us the way. The ground was covered by the lecturer in such a way that you did not lose count of any one of the points raised whilst gripping on to the next. The memory was, at no period of the afternoon, overstrained, though given much to meditate over and, finally your mind was stimulated and you left the hall more pleased than ever with what those islands have done for the Empire in the past and more expectant than ever of what they will do in the future.

We knew it would be thus; had it been otherwise we should have been disappointed, whereas we got even more than we bargained for. Those who imagine that the West Indies are of no importance will be wise to read Sir Edward Davson's lecture especially if they live in the United States. Some folks there be who would have you believe that these most fertile possessions—including of course British Guiana—are only, in comparison to the rest of the Empire, as the packet of pins that used to be given in a draper's shop, as change, for a farthing. Professor Shepherd of Columbia University must be among that number, but there are some on this side of the Herring Pond who are not much better. It is hard lines on our Colonies, West Indian and otherwise, that such folks who know so little can yet sway the fortunes of these islands of the Empire by their votes, whilst the people in these islands and elsewhere can do nothing to help themselves, although they know so well what is needed. This is where this paper of Sir Edward Davson seems to our mind to close one epoch, and open the way to another, and a far more satisfactory and progressive epoch. If the West Indies can only develop the "will to federate" or otherwise to work as one colony surely they must be reckoned with on this side at least on a par with a constituency over here.

Struck with the paper we are forgetting to discuss the man who read it. Having followed Sir Edward Davson's career for many years we can say that as a coming man he has never once had to falter. Slow but sure, cautious but daring, the progress made has been uninterrupted; we cannot recall any instance when he made a *faux pas*, and had to retrace his steps and start again. Like his father, Sir Henry Katz Davson, the general knowledge possessed by "Our Friend," on the needs of the West Indies, politically and socially, or from a fiscal and financial point of view, is widespread and rests on a good foundation. Banking, commerce, the law, the army, and agriculture all went to build up the back-bone of the family and is still sustained. To this has been added, in later years, economic politics and the championing of the claims of those who have helped to build up our Western Empire, to be justly dealt with on this side even if they cannot be directly represented in Parliament—that Mother of all Parliaments, which alone seems so nervous of adding representatives of her Overseas' chicken to her home brood of legislators; as we had occasion to remind our readers only last month (p. 193-194).

When passing through Canada last June, Sir Edward Davson, interviewed by the *Montreal Daily Star*, showed over how wide a field the commercial interests of the British West Indies are now spread. "As President of the Associated Chambers of Commerce of the B. W. I.," he said, "I have just been on a tour through all the islands to discuss matters, preparatory to holding the coming meeting of the Associated Chambers in Barbados next February, preliminary to the meeting of Chambers of Commerce of the Empire to take place in Toronto in September. . . . I fully realize that if we are to make the Empire what it ought to be, something more is wanted

(*Concluded on p. 7.*)

Business Notices.

1.—The address of TROPICAL LIFE is Messrs. BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

2.—All **literary communications** should be addressed **to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

3.—All **business communications and payments**, either for subscriptions or advertisements, should be sent **to the Publishers** of TROPICAL LIFE. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

4.—The Subscription, which is **Ten Shillings** per annum, may commence at any time, and is payable in advance. Life Subscription, £5.

5.—The Advertisement Department is at 112, Fenchurch Street, E.C., where all inquiries respecting advertisements, charges, &c., should be addressed c/o the Manager of the Department. At the same time will advertisers kindly note that all copy and blocks for advertisements must be sent to 112, Fenchurch Street, E.C., before the thirteenth of each month, failing which, insertion of same in current month cannot be guaranteed.

6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Changes of address should be promptly notified.

8.—Non-receipt of copies of the Journal should be notified to the Publishers.

9.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

JANUARY, 1920.

The West Indies as a Mighty Atom.

As stated elsewhere, p. 8, the ignorance of the bulk of the British public as to the value of their Imperial heritage is as pitiful as it is blameworthy. Since, however, we are what we are, it is far better to face facts and make the best of a bad job.

Owing to the war having taught us to ignore any quantity less than a million if it is a question of money, or of thousands if we are discussing population, one great advantage that would accrue if we could form at least a Customs' Union, if not a practical Federation of the British West Indies, would be in the much larger returns and more important tables of statistics, that this would enable and in fact oblige us to lay before the House of Commons, and the country at large in connection with these Islands. Such an accumulation of statistics would compel attention, which alone is needed to enable the Islands to come into their own. A fertile area of 110,000 square miles, a population of over two millions, that can be taxed as in Trinidad at £3 to £4 per head, above all a total trade of over £30,000,000 is bound to attract that attention which the Islands require and deserve but can never be looked for if these totals are divided by four, five or even larger numerals.

So much for the material gain through combined effort. Now let us think of the social and political gain; unity and solidarity go further than anything to secure that respect of and consideration from the British public, *via* the House of Commons, which the West Indies still need if the most is to be made of their resources, developed or otherwise.

When discussing these among other "Problems of the West Indies," Sir Edward Davson reminded a crowded and influential meeting of the Royal Society of Arts of the geography of these wealth-producing islands among which Trinidad, once it has been made the Hong-Kong of the West as Nature has all along intended it to be, can alone become more valuable to us than "man e'er dreamed of." Starting from British Honduras, in Central America, we pass east to Jamaica and thence farther east to the Virgin Islands and from here, like the arc of a bow, the islands then run south to British Guiana on the South American Continent, thus almost encircling the Caribbean Sea. It is in these islands that over two million people are to be found, a people which is as well experienced in commerce as in mining, in forestry as in sea-fishing, including whaling, in mineral-oil boring and in the cultivation of nearly every leading tropical crop. Coupled with these qualities is a world-wide reputation for hard work, and to do or die under the harshest surroundings, as the lives and deaths of many a West Indian labourer far from his island home will forever bear witness to. Surely such a collection of trade developers are worth the closest attention from financiers and others on this side during the period of post-war trade extension with which we are faced. There is no question as to the islands receiving all the attention from financiers that they deserve, the only query that still has to be answered refers to the group of financiers who will be first and finally in the field to do that development work—will they be English or American?

Meanwhile, Sir Edward Davson reminds us:

"The problem of West Indian federation is a difficult one, for their geographical position in relation to each other as islands creates obstacles which do not exist in considering the federation of contiguous colonies on the mainland; while the different forms of government in the West Indies, ranging from the full representative Government of Barbados to the purely Crown Colony Government of the lesser islands, do not facilitate a solution of the problem. In the history of the West Indies, attempts have been made to combine or federate various parts, but these have always proved unsuccessful, except in the case of the Leeward Islands Federation, which still exists, and which is the only Crown Colony federation in the Empire. It does not follow, however, that because attempts have failed in the past they should necessarily fail in these days of more enlightened views and broader vision. Various schemes have been put forward, notably one by Mr. Gideon Murray, late Administrator of St. Lucia, which aims at creating a central Federal Council out of the various forms of local government and which has aroused much interest in West Indian circles. Another

proposal has been to extend the Leeward Island Federacy to Trinidad and the Windward Islands, thus creating in the first place a federation of the West Indian Crown Colonies, and leaving Barbados and British Guiana with their more representative Government, and Jamaica, the Bahamas and British Honduras for further and later consideration in this respect.

"There are, however, two essential points to be borne in mind. The first is that there must be what I may call 'the will to federate,' and while it is undoubted that this is already beginning to grow, one finds at the same time the opinion largely held that federation, like the Canadian question, should not be forced, but should be allowed to grow and ripen as people increasingly appreciate the advantages of a constantly developing community of thought and action.

"And the second point is, that if a people aspires to become a federation or a commonwealth; if it aims at taking its place with other colonies in the councils of the Empire, it must not only develop its material life to the utmost of its capacity, but it must also educate itself, and whilst thus educating itself it must so raise its standard of thought and extend its vision that it can rightfully claim that its opinion may be treated with respect in considering the greater problems with which it would then be faced.

"Meanwhile two very important resolutions have been passed, one being that a system of free tariffs in colonial products (other than rice and oil) should be established between British West Indian Colonies and British Guiana, which means that in future the products of any one Colony could be imported into any other Colony without payment of duty. The other was that the Colonies concerned should enter into a Customs Union, and adopt a uniform tariff under which the receipts should be pooled and allocated to each Colony in proportion to its dutiable imports. This establishment of free trade between the Colonies, and this right to move duty-paid imports from one Colony to another without payment of further duty, would be a great step forward. The Collector of Customs in Trinidad, in his report to the Government, says of this: 'Its adoption would draw the Colonies closer together in trade and other questions, largely increase trade and communication, and secure for same of the smaller Colonies a reasonable tariff instead of the unsound and indefensible tariffs with which they are now burdened. It would also place the Colonies forming the Union, whose total trade is some £30,000,000 per annum, in a much stronger position to negotiate trade agreements, &c., than they are now.'"

This is where the people in the West Indies stand at the moment. Will the many atoms over there agree to unite into a comparatively mighty item, or will they continue each to plough their own lonely furrow known only to a few, and remain of financial and political consequence only out of sentiment rather than for reasons of material benefit and commercial prestige? We would claim that the trend of the West Indies is entirely in the direction of united action and that finally they will co-operate under one head or the other, Federation or Customs Union, and so form a united whole to the world at least as regards their statistics of trade, agriculture and population. May the day for such an arrangement be near at hand. We wish the people of the West Indies and British Guiana the best of luck when that day does arrive.

Sisal for Selling.—No. XIII.

EX-SOLDIERS AS GROWERS ON A CO-OPERATIVE BASIS.

(*Continued from September issue, p.* 143.)

WE remember, we believe it was in the issue for March or April, 1917, of *United Empire*, that Mr. T. H. Wells discussed the production of sisal on a co-operative basis. Whether the proposal then made is commercially possible or not, any serious proposals advanced to bring about united effort in the productions of tropical and sub-tropical crops merits attention, since, owing to the very nature of things, and especially of the future that lies ahead of us when labour is likely to become more and more trying, co-operative action between planters can often help to bridge over times of trouble when mutual help can do what no individual effort can expect to achieve. For instance, to outsiders as the authorities, the railways, the steamers' agents, or your labour force who may be the cause of the trouble, the knowledge that there exists a policy of co-operation between the planters is quite sufficient to keep unreasonable demands within bounds. On this account, notwithstanding the difficulties that lie in the way, we have always been glad to hear of any proposals, better still of any schemes actually at work, that tend to popularize the closer working of planters (on the same lines as we have long had the closer working of manufacturers) in the production and bulking of their crops for sale to the big buyers at consuming centres. If any body of men needs co-operative action, or at least a commercial understanding (that cannot be broken to the advantage of the mean ones with which we shall always be cursed, even in the best circles) when selling their crops, it is the planters in the Tropics at the present time, no matter what centre it is or what the crop produced. Yet, of all the stubborn unco-operative folks on this earth, the tropical planter, on the whole, runs every chance of winning an easy first prize. One day perhaps he may regret this characteristic, since he shows no signs of being in a hurry to rid himself of it.

This being so, we remember reading Mr. Wells' notes with pleasure and care, especially the opening paragraphs outlining his scheme, when he said: "My proposal is for a community of ex-service men, married or single, or married and single together, which shall consist of twenty men, preferably with, in addition, six or more women and children, to form a co-operative settlement for the purpose of growing sisal fibre; each man or family to be a member and to have an equal share and equal opportunity, but, at the same time, each member to own and to work, as his individual property, his own plantation. Sisal-growing offers, in my opinion, one of the most favourabe openings for such a co-operative settlement, since

no part of the work is very heavy, its cultivation is easily understood, it requires no special agricultural knowledge, nor special knowledge of any kind except in the management of the decorticator. Above all, it is a crop which can be harvested and prepared for market the year round, with no fixed season, and is independent of stoppages, weather, &c."

The above may not be the exact words, but they convey correctly the idea outlined, which went on to tell us that the cost of living is reduced to a minimum by the fact that members can (and in fact must) produce the greater portion of their food, and, having supplied the needs of the family, the crop itself does not "bleed" the planter for manures, ploughs, &c., after the start.

Now that the war is supposed to be over, and we have German East Africa as well as Papua (German and English), Queensland, the Northern Territory of Australia, the Caicos Islands, in which to plant sisal, one can only hope that a start will be made. We all know that the price of sisal fluctuates to an extent that is quite uncanny at times, but taking it on the whole, year in and out, and utilizing also the best areas on the property to grow other crops and so avoid having all the eggs in one basket, there ought to be a good opening in a suitable climate and atmosphere for ex-service men willing to try and determined to succeed.

Mr. Wells suggests that the area required would be at least 600 acres for sisal only; in addition, there should be as much again for other crops, grazing, and a timber area for fuel, but at the same time larger areas could be allocated with advantage; the bigger area would allow for the natural expansion of successful communities and allow for a second and third planting when desired, a great help, especially when the demand and consequently prices are good, as then there would be no break in the cropping when that period is reached.

"If," works out Mr. Wells, "the minimum area of 1,280 acres is allocated to twenty families or men, each settler will have to grow thirty acres of sisal, and have twenty acres for other crops and grazing land, leaving 280 acres for the mill, for fuel and other uses, but it would be better, for the reasons stated, if these areas were doubled. Even as it is, each settler, if the mill is to be kept going at an economical rate, will have to contract to supply the crop of thirty acres of sisal to keep the mill fed.

"I would suggest that, to test this scheme," concludes Mr. Wells, "not fewer than five and, better still, ten settlements be formed under the ægis of some Government society or co-operative land company as soon as may be, and these proving a success, the number of men who could be settled in this way is practically unlimited. The amount of money involved is not large, and even if failure did occur, most of the money would still be saved in the improved value of the land."

The above was written two years ago, when the only men available to start were, for the most part, not in a state to make a start, but now it is a clear year, and more, since the signing of the Armistice, if ever anything is to be done with sisal, or other crop, on a co-operative basis, no time should be lost in making a start. The importance of not delaying will be all the easier to realize, when it is remembered that the first settlement or two can only be of an experimental nature, and that means two or three years before a decision can be arrived at as to whether it will pay to go on and extend the scheme. One thing in its favour lies in the fact that most of the men now released are supposed to have gone to some job or berth, but on that account, when the next batch of men are "demobbed," there is certain to be a large percentage among them who have no billet to go to, and even if there was an opening in an office or factory, they will not want to take it, since they have remained in the Army rather than do so. Among such men, therefore, a large number should be available for sisal planting and tropical development work generally.

Mr. Wells agrees with us that the safest estimate as regards yield is half a ton of sisal fibre to the acre per year on a life of seven or eight years. This, we take it, means the total life of the plant, although many talk of a "life" as being the period only during which fibre can be obtained from it. Three to three and a half years from the time of planting must be allowed before the yielding stage is reached, and this will be a lean time for the settlers. Even with the very first arrivals, however, other work might be found to help soften the cost, at any rate whilst the vegetables, poultry and pigs are coming along, or, as Lord Leverhulme suggested with coconuts, land could be broken, a homestead erected, and the first plants put in for the newcomers to go right in and take possession of on arrival. Once such a course were adopted, those *in situ* could, of course, augment their income by clearing the land for those yet to come. The trouble in all these things is the first start, and as that, in such a case as is now outlined, can mean only a little more or less outlay, the money must not be kept back, since, with good management, it ought and will come back to those advancing it, but if it does not quite come back, most, if not all, of those who will get the benefit more than deserve it.

The question of health, especially with ex-warriors, must be taken into consideration. The article on which we are basing our remarks provides for this, and we will conclude these notes by what it says, viz.: "From a European point of view climate may be supposed to be a drawback. No greater mistake could be made—the regions where sisal grows best in all countries, although hot, are extremely healthy, whilst the heat, owing to its dryness, is not nearly so distressing as are hot days in a humid climate as in England. Generally speaking, from the point of health and comfort, the climate of the sisal countries is to be preferred to the English climate."

(*To be continued.*)

Sugar for the Empire.

IF the Empire is ever to be self-supporting, it is high time that something more practical than talking about it was attempted, claimed *Wileman's Brazilian Review* in a recent issue, which then went on to say:—

The only chance of independence, as far as sugar is concerned, lies, as Mr. Hamel Smith, of TROPICAL

Life, insists, in India, where all the conditions—climate, labour and soil—requisite for intense production are to be found and only capital and direction are lacking.

Both of these Britain can and must supply if she really wishes the Empire to be self-supporting or, in default, she will have to continue relying on continental sugars to supplement supplies of cane and bring down the price of sugar to a lower level.

To help win the war British consumers submitted to the sacrifice entailed in the high price of even so essential an article of their diet as sugar, as doubtless they would be prepared to do again so long as there seems to be some prospect of their sacrifices being ultimately recompensed by assurance of an increase in production sufficient not only to make the Empire independent of other sources, but to reduce the cost of sugar to something like a pre-war level.

Without India, no amount of expansion in other directions can render British consumers independent of outside supplies for a generation, at least, to come, and unless practical measures to that end are summarily adopted, tired of waiting for a lead, British consumers will inevitably seek their sugars—cane or beet—in the cheapest markets, enemy or no!

At present, sentiment disinclines Britishers to deal with the enemy, and agrees to give preference, firstly, to Empire and, secondly, to allied or neutral sugars.

But that is but a passing phase, and before very long, unless the British Government can devise some practical scheme for expansion of production within the Empire, British consumers will be buying indiscriminately from ally, neutral or enemy alike.

If Cuba could increase its production to 4,000,000 tons in sixteen years, it would be a disgrace to British capital and enterprise if after all our boasting we could not at least equal Cuba's effort.

Owing to the heavy run of orders for Messrs. Brown and Munro's "Practical Guide to Coconut Planting," having exhausted the first edition, the book is being reprinted. As costs are so much higher, the price must necessarily be increased, we regret to say, but to what extent can only be stated when the cost of reproduction has been ascertained.

Trade, Politics, and Finance.

In spite of the aftermath of the war, of strikes, exchange, restriction of output and other evils, it has been a better year for the trade of the United Kingdom than those who lived through it as an "ordinary person" would have credited had they not seen the full returns now published. If our imports (£1,631,902,000) exceed our exports (£962,695,000) by more (£669,207,000) than we care to see, the adverse balance is better than last year, when the adverse balance (783,787,000) was very nearly 50 per cent. more (instead of 50 per cent. less as this year) than our total exports.

Then again, as the *Financier* of January 8th very properly pointed out in their excellent leader on "Trade in 1919," whilst our exports are net, the fact that the figures of imports include insurance and freight, which are heavier than they used to be, make the comparisons still more favourable. In face of this, it is hoped that the current year will see the balance more than restored. The imports (year's totals) of raw materials included: Cotton, £190,771,000, and oil seeds, nuts, fats, oils and gums, £131,280,000. Next in importance came wool, which showed an increased import of £65,180,065 for the year.

The daily papers just now are full of a raw rubber crash down Mincing Lane, which interests us only as recalling cases in the past of the incorrigible kindness of heart of Mincing Lane, especially towards aliens. The world of song and painting is not the only one where the foreign name is more seductive to the English mind than plain Smith, Brown, or Jones. The victims—so very British—may smile and claim that the net result will be merely so much less excess profits to pay, but it is time a stop was put to one-sided speculations of such a nature. The "Lane" should demand much heavier deposits or "cover," if only to keep the men of straw (when it comes to paying out) at a distance. We remember many crashes similar to this one. First cotton, then sugar, quinine, pepper, sugar again, coffee and cocoa in 1906 or 1907, and so on. Every time the foreign speculator seems to have come out smiling, whether as a winner or loser. We must own that sometimes no one seems the worse for the trouble, but this is not always the case, and so feel that now, when so many changes are being introduced, unlimited speculation without substantial "cover" ought to be discontinued.

We mention this as, of course, the price of raw rubber must feel the effects of such a hurricane; perhaps by now the trouble has been checked, since we are told when rubber went above 2s. per lb. the operator began to sell forward—but in the end he had to re-buy—hence the crash. In spite of this, rubber emerged on January 10th as being still worth over 2s. 9d. for both crêpe and smoked sheet, against 2s. 7¼d. per lb. for Fine Hard Pará, whilst by the 17th these quotations stood as shown on p. 13.

We like the way that the *Confectionery Journal* lands its political hits when attacking the Sugar Controller, who is reported to be blaming Germany and everything else for the shortness of sugar and its price in the United Kingdom, when all the time, it seems, the fault lies with the Sugar Controller himself. Why did not the Government buy sugar in Cuba before the great record crop was all sold? How much Java, Formosa, and Philippine sugar have we bought? If, to take things easy, we need 1,200,000, what has been done to meet that certain demand? Why was so much of the Mauritius crop allowed to go elsewhere? Is it true that Uncle Sam has secured the whole, or practically the whole, of the Mauritius output, as well as most of the Cuban and Java crops, to say nothing of the Philippines and her own production? If this is true, no wonder we are so short; no wonder we have had to pay such high prices as this, the top one (if correct) on the basis of £120 a ton for Cubans. Where does the difference go? Is it all taken taken up in freight and that useful term "overhead charges"? On this point it is interesting to note that the *Times* Trade Supplement for January 10th, in which our Editor on pp. 448-449 answers Dr. C. A. Barber in full *re* his famous article on "India—Not a Producer of Sugar" of August 30th

last, also "spits out" on the subject, for it says: "The sugar-beet production in U.S.A. for 1919 is shown to have been 7,298,000 tons—a large yield—against 5,890,000 tons in 1918. When the Food Controller made out the 'world deficit of sugar production' which he imparted to the Press,* did he include this 1,408,000 tons increase in his calculations? The further statement that the Food Controller made on January 4th was to the effect that Cuban sugar was held at from 60s. to 120s. per cwt., against an average price of 10s. per cwt. before the war." "Was not Cuba in June last an eager seller of an unprecedented sugar surplus at an average price of 30s. per cwt.?" asked the *Times*, to which we would add that recently Willett and Gray spoke of the Cuba crop being sold forward at 25s. per cwt. only.† Now who is making th profit between 25s. and 120s., or even 60s.? The whole matter needs investigation on a parity with the suppression of details *re* the riots in the Punjab. We are quite sure that the heads of the Home Government are doing their best, but their best can never be good enough as long as they have their present advisers behind them. The public are being cheated in every detail and know it, the working classes especially, and this is the basis of the cause of the unrest, of the limitation of output, and of orders leaving England for elsewhere. The working classes do not care, they strike and get more, 38s. is now 85s., but the receiver of the 85s. tells you that that amount is not worth the 38s. he received in pre-war days, owing to the profits bled out of the public, to be added to shortly by increased railway rates. If you doubt this travel up in one of our third class railway classes, when there is no light (to save money no doubt) and the British workman cannot read. Unfortunately the bulk of us are neither profiteers nor trade unionists and it is on our poor backs the blows fall.

We are most anxious for the planters to get their share of the spoils, but judging by the sugar scandal we cannot help feeling that when real trouble comes in England, the fault will lie not at the door of labour (culpable as they are on many points) but on those who are scooping in the differences between the old price of the raw materials, as 25s. or 30s. for sugar, and the present costs to the buyers in the U.K. to-day. Truly can the poet sing "Oh! What a Happy Land is England" for the bulk of us, who are neither profiteers nor Labour Unionists.

Now let us look at the latest prices, beginning with sugar on January 10th and speaking only of the "free" market. West Indian crystallized sold at 98s. to 102s., White West India 110s., White Mauritius 112s. to 113s., White Mozambique 112s., and White Java at 114s. to 114s. 6d.

Owing to the Chinese demand for silver suddenly going slack, the price of the metal fell sharply and after being 82⅛d. is now at 77d. only as under. This, in turn, has undoubtedly affected some of the produce markets through the variations in exchanges. In the free sugar market: West Indian Crystallized sold at 102s. to 106s.; Trinidad Syrups, 98s.; Natal, 90s.; White Mauritius fetched 113s.; White Javas, &c., 114s. 6d. and 115s. Owing to the de-control of coconut oil, copra seems to have run up to £73 10s. for Ceylon and rather higher for Malabar, and even higher rates were discussed although not put in print. On January 17th, however, a lull had intervened and Ceylons stood at £73. Malabar, £73 10s., fair merchantable to F.M., sundried, £71 to £72 5s. The article, however, is badly wanted and if prices are not to run up over here, larger supplies must be sent either of copra or oil. Marseilles, Antwerp and Rotterdam all seem lower in comparison to London at £71 for F.M.S. Desiccated coconut sold at 140s. per cwt.

With coconut oil Ceylon is quoted at £114 and Cochin £116 in casks. With coffee, bold greyish Jamaica fetched 150s. 6d., and good ordinary up to 129s. Peaberry Uganda went at 131s. 6d.; fair bold, 145s.; low middling greenish Costa Rica, 154s.; and Peaberry, 131s. 6d. Bold brownish Sumatra robusta, 113s. Tea has a downward tendency for lower grades, but there does not appear to be any change for fine. Spot manila hemp is put at £62, rising to £65 for March delivery for Grade J. Fair New Zealand is worth £52 and East African sisal sold at £48 to £56; others up to £58. Shellac has jumped up amazingly. T. N. Orange is now nearly twice the price quoted in November (p. 181) and stands around 865s., 880s., or 900s., against 700s. for hard to blocky Garnet A. C.

The rubber market has been erratic probably on account of reasons given elsewhere. No. 1 Crêpe on January 17th stood at 2s. 8d. to 2s. 8¾d. with future rates slightly rising, and Standard smoked ribbed sheet much about the same, against 2s. 7¼d. for Hard Fine Pará, 2s. 5½d. Soft Fine, 1s. 9½d. for Caucho Ball. West Indian sheet Balata is quoted 4s. 4d.; Venezuelan block, 3s. 4d.; Tumaco, 2s. 10d.; fair Panama, 2s. 9d. Copper is worth £118 to £120, according to delivery, and tin is higher at £372 to £375.

The following is a comparison of the principal points of the Bank of England on January 17th compared with the corresponding week last year:—

	1920	1919
Bank Bullion ...	£94,287,105	£80,544,216
Reserve of Notes ...	23,540,610	28,548,250
Private Securities ...	84,780,635	78,886,493
Notes in Circulation ...	88,249,635	69,698,840
Rate of Discount ...	6 per cent.	5 per cent.
Price of 2½ % Consols...	51½	59½
Price of Bar Silver ...	77d.	48 7/16d.

The London Cocoa Market.

BY THE EDITOR.

THE Board of Trade figures are out for December and therefore for the whole of the twelve months for 1919. With regard to cocoa, the deliveries for Home

---

* Taking care apparently to avoid the technical press, for we were not favoured with a copy of the fascinating fairy tale.

† In their last circular of December 31 just to hand, Messrs. Willett and Gray say, "Sales are reported to the U.K. at 11c. f.o.b. Cuba for Raws, against, we believe, 5·88c, in 1918 c. and f., (which is better than f. o. b.) specified January positions. These sugars last week were offered at 8¾c. c. and f." Quotations show lower ideas as time passes, viz.:—

New York, December 31st.

	Dec.-Jan. cents	Feb.-Mar. cents	May. cents	cents
96 per cent. Centrifugals	11¾	9½-11½	8¾ 9	8¾-9

Consumption again show an increase, excellent as were last year's figures. Look at the table below for the three years, they show that we have taken into consumption rather over 175,000 tons of raw cocoa during that period, making an average delivery of 58,350 tons per annum. For the three years, 1912-1914, previous to the war or nearly so, we only required 83,350 tons which works out at 27,783 tons per annum. If these figures are correct, then we have much more than doubled our consumption deliveries. No wonder therefore, in face of this and high costs, that the price of cocoa stands where it does to-day even without the demand from Germany being normal or anything approaching normal.

Here are the figures:—

Raw Cocoa Only—

	Landed Tons	Del'd H.C. Tons	Imported Tons	Stock Dec. 31. Tons
Jan.-Dec. 1917. ...	57,908	49,979	4,828	44,500
,, ,, 1918. ...	42,392	61,253	584	24,300
,, ,, 1919. ...	113,647	64,613	27,951	45,050
Increases ...	71,255	3,360	27,367	20,750

Those who have been watching the shop trade in the U.K. must be wondering where all this cocoa has gone to; it certainly does not show in the exports which are so small that one almost feels inclined to doubt their correctness. We have heard so much about the demand for powder in Germany, that one not unnaturally looks to this country having had a share of the business. If it has done so, then the proportion has been small, even allowing that no manufactured cocoa, or preparation of cocoa, went elsewhere, which, of course, would be incorrect, since the Board of Trade figures show that to all markets our total exports during 1919, of powder without sugar, only amounted to 1,188 tons for the twelve months. This amount would not go far to feed Germany (for it went to "Other Countries" than British Africa and Australia), and it cannot be surely, that powder sent to our men, to the Allies, or to the people themselves in Germany, does not appear in our returns under the idea that it is for official use or on H. M. Service. Meanwhile our deliveries for Home Consumption are surprisingly good and those for export disappointingly bad.

The Grenada crop, calculating that the shipping facilities were no worse (or better) this year than in 1918, has not made much of a start, for only 6,703 bags were exported between October 1st to December 8th, against 9,711 bags last year. Against this, Trinidad shipped to the end of November only 5,980 bags to all ports, against 27,631 bags in 1918 and 6,565 in 1917. Much leeway is therefore to be made up, especially with Trinidad, against this. The last news from Ecuador shows that their receipts for the eleven months, January-November, continue behind last year, although, I take it, there must be more facility to ship. Thus cocoa continues scarce on this side with the result that prices are running up, reaching 160s. at the end of the first week this month. The January-November receipts at Guayaquil City, amounted to 608,792 quintaux against 684,097 quintaux last year when, it is probable, the demand was more restricted than now.

The Bordeaux market on January 5th was stronger, the main obstacle, to further progress over there being the rate of exchange.

I should imagine that the shortage of sugar is also a drawback; it certainly is and will be still more so over here, as can be judged by our remark in the opening paragraphs of "Trade, Politics and Finance" (p. 12) this month.

As with both London and Liverpool, Accras are realizing good prices in France, both in Bordeaux and Havre. On this side, the demand from the Home Trade has pulled up prices equal to, or almost equal to, what is offered by the exporters. This makes one wonder what is really going on in Central Europe. Has the export demand from Germany been checked by the German ban on exports (to try and prevent German goods being sold at "rubbish prices"), as well as by the interdict on imports to discourage money from going outside the country to further pull down the value of the mark. Lack of coal, of sugar and of certainty as to what Germany is doing must keep our export trade in raw cocoa at low pressure, so long as these troubles exist. Meanwhile, we can congratulate ourselves on our home consumption, especially during 1918 and 1919, whilst trusting that we shall do as well, or better, during 1920.

Stocks at the end of the year showed a drop. London on January 3rd stood at 112,634 bags, against 153,143 bags on August 16th, whilst Havre on December 31st had 232,702 bags, against 386,459 as recently as September 30th. The total U.K. stock also shows a drop, of 28,000 tons as compared with 73,500 tons at the end of August; this gives an average increase of deliveries over receipts of 7,000 tons per month. How much longer will this continue?

Here are the Havre stocks on December 31st:—

Havre's Stock and Prices, December 31st.

	1919 Bags	1919 Value Fcs.	1918 Bags	1918 Value Fcs.
Pará	9,624	259 to 265	796	150 to 155
Bahia	19,186	235 ,, 255	1,656	140 ,, 147
Venezuela ...	18,208	260 ,, 300	2,057	150 ,, 185
Trinidads ...	22,325	255 ,, 265	2,912	147 ,, 153
Grenada and O.W.I.	4,024	245 ,, 265	—	145 ,, 150
San Thomé ...	19,676	235 ,, 240	390	144 ,, 147
San Domingo ...	753	215 ,, 230	86	136 ,, 142
Haiti	11,552	190 ,, 215	688	134 ,, 140
Accra	54,626	205 ,, 215	512	132 ,, 135
Guayaquil ...	69,542	266 ,, 280	3,158	150 ,, 160
Other kinds ...	3,186	—	93	—
Totals	232,702 bags		12,348 bags	

Against this, London's latest figures gives her stocks, on January 17th, as under:—

London Stock, Jannary 17th—	1920 Bags	1919 Bags	1918 Bags	1917 Bags
Trinidads	23,585	15,462	16,182	17,177
Grenadas	11,803	6,343	14,554	12,246
Other W.I.	5,675	2,784	12,187	23,106
British W. African ...	20,262	31,043	60,870	39,969
Portuguese African ...	17,644	13,707	8,864	23,163
Cameroons	1,973	1,319	6,332	56,031
Ceylon and Java ...	6,915	7,638	30,707	15,462
Guayaquils	7,364	14,187	45,722	2,044
Bahia and Brazil ...	1,326	1,174	4,913	25,568
Other foreign ...	6,940	3,507	6,268	10,154
Totals ...	103,487	97,164	206,599	224,920

I feel, therefore, that it is time for more liberal supplies to come along. Even of the accumulations shown above, it is more than doubtful what is available for purchase, even *ex* second hands and the drop in the total U.K. stock preclude all idea that cocoa elsewhere can make up for the drop in London and Liverpool. Liverpool, at the end of November, returned her stock as being 112,970 bags, practically the same as London's stock (112,634 bags) on January 3rd. One feels therefore that wherever the 45,000 tons (or 675,000 bags) said to be on hand in the U.K., at the end of the year, may be lying that these two centres have but a small share.

Congratulations are due to Mr. W. H. Johnson, Director of Agriculture for Southern Nigeria and formerly of the Gold Coast (when the great expansion in their cocoa-production industry took place), for the excellent leaflet he has drawn up and issued for the benefit of the native planters under him. It is to be hoped those for whom the advice is intended will follow it; if they do not, others will, for reprints are reappearing in unexpected places which show how much those capable of judging appreciate what Mr. Johnson has to tell us, so clearly and inclusively.

Writing from New York at the end of the year, Messrs. W. R. Grace and Co. tell us that Accras dropped over there. On this side they started to go higher and still tend that way. Even New York, liberal as she is as a rule, when buying Bahias, finds their level of values too high. The last prices we received from Rio were very "full up," and New York even found the same thing, for it is said that although, on December 26th, Bahias were weaker, they were still entirely out of range when compared with other cocoa of a similar grade on offer.

Strange to say, Messrs. Grace complain of no news from Trinidad or Venezuela. How is that, are *their* cables broken? All the same they want to pull the price down, saying that exporters must take less or hold large stocks. The same as over here, the prices of Arriba and other Guayaquils are very high and so the cocoa "is off" until prices are more reasonable. The crop is beginning to arrive in Guayaquil, we are told, so present prices should come down. With all cocoas in the United States, as over here and everywhere else, prices can no more be localized than the effect of the ratification or otherwise of the peace terms can. The market has become quite internationalized, which renders it difficult to quote. It is better at times for all concerned, producers and consumers, to outline the international position in place of giving, more or less, nominal local prices. Some question this, but I hope they will not find out their mistake. Exchange, labour, coals and sugar, or the absence of them, have to do, and will have for some time far more to do with the price of cocoa than anything else. Those, therefore, who believe otherwise will do well at least to watch and see if this view does not turn out to be correct.

I have rather lost count of San Thomé, but Colonel Wyllie, of the Missão Agronomica Portuguesa, tells me that his figures roughly agree with mine, and, in that case, San Thomé sent 410,276 bags to Lisbon in eleven months, January-November, and 158,000 bags elsewhere. Of course a good deal of this may have come over from 1918, so gives no reliable idea of what the island produced last year. All the same the above figures show that their total exports amount to at least 568,276 bags, even if no more than the shipments have been made direct than those which went to make the 158,000 bags sent elsewhere than to Lisbon.

Bahia received 123,428 bags from the estates in November and exported 97,406 bags, so had a full month. This has run up her figures to a record height for seven months, I should imagine, for they compare thus:—

Bahia (City) Movements—

	Receipts		Exports	
	1919 Bags	1818 Bags	1818 Bags	1915* Bags
May-Octr. ...	333,040	417,195	299,572	406,961
November ...	123,428	97,406	120,620	66,697
Totals	456,468	514,601	420,192	473,658

* The previous record.

How this growth now stands in America against its local quotations I cannot say, but I noticed that in November as in October over 80,000 bags went to the U.S.A. and very little therefore to Europe, whether for German consumption or any one else.

Much speculation, both in the mind of the market as well as in the goods themselves, has been going on in American cocoa-powder, outside firms joining in the gamble. Maybe they are the only ones really gambling. This fact, the speculation in powder, however, can be noted by planters because although we may be willing to import and consume American and Canadian chocolates we cannot surely, in face of our excellent home trade deliveries, want American powder in the U.K. It must be therefore for the Continent, i.e., Germany. If this is so, then there must be a fixed idea that Germany needs and will buy and pay for, large quantities of manufactured as well as raw cocoa, now that she has signed the Peace Treaty with France and England, and so one wonders what to expect. I do not want prices to go higher. Chocolates as now offered for sale at 4s. to 6s. per lb. retail, when the public—taken as a whole—are drawing in their horns of plenty and extravagance (for the merry-makers in London cannot be taken as typical of the whole country) and so, if costs go too high the satisfactory demand for our home consumption, as shown by the figures at the opening of these notes, will not only not be maintained but they will go back. Whether I want prices to go higher or not, however, will not prevent them from rising above their present level as given below, as they must do if Germany (at present of no real count as a buyer, at any rate of raw cocoa) starts to buy and so adds her competition to that which already exists in England, the U.S.A. and elsewhere. On the other hand, as Germany goes ahead with her buying then the extreme demand for powder from there will decrease gradually as Germany's purchases of raw cocoa in-

crease and that will lessen America's demands. Some already claim that a fair quantity has been going to our ex-enemy's market.

Leaving each of the producing centres to work out their own ideas as to future value, according to the markets most interested in their growths, I would place present values in London and up at Liverpool at about the following levels:—

Trinidads I am told have been sold up to 132s., and not very recently either. This I said was the case sometime back, but was then told I was wrong; now I repeat it and I believe good red but a little "rough" was sold this week at 129s. On this basis, I value nominally, in the absence of reported sale, good to fine and superior marks 130s. to 132s., good middling to good red 127s. to 129s., low middling to good medium 124s. (or even 122s., for the commonest grades are not wanted in proportion to the better and best qualities) to 126s.

Grenadas.—One fine mark went at 130s. and others are, I believe, held for that price. Good to fine marks went at 127s. to 129s. and, here and there, 129s. 6d. Good medium 126s. to 127s., good fair 124s., and fair 122s.

St. Lucias.—None sold above 128s. but quality for quality, this growth should rule as high as Grenadas, say 122s. to 129s. as extremes, and the same, in proportion, can be claimed for Dominicas and Jamaicans. There must be some supplies of these about and so later on we shall be able to say more exactly how values run.

West Africans are again at 104s., if not for home trade as well as export, then very near to it. Business has been restricted for want of supplies, not on account of the absence of buyers even at present levels. The demand is especially for new crop. We have a new institution on the Underground Railway here in the shape of a "hustler" to make people move in and out of the trains much more quickly so as to expedite business generally. We commend this innovation to General Guggisberg, with the hope that he can raise a "hustler" on the coast to hurry some of that nice new crop cocoa about which Mr. Mann of Mann and Cook has been writing in the *Times*. There is no time for shipping like the present for any growth of cocoa if you want good prices. Common grades go down to 85s. and even lower, for the great demand is for the best qualities, but judging by the state of the market I should say one or two folks may have been caught "short," and if so, this would account for the strength of this particular growth.

Guayaquils.—Are up to 160s. or 161s. for Arriba, whilst nominal quotations for Machala and Caraquez run almost as high.

Bahias.—Must be worth 124s. or 125s. for fine superior when available.

St. Thomé.—Are valued at 120s., or higher, for fine, but exact values are difficult to ascertain.

Ceylon.—Good bold went at 180s. to 190s., fine at 130s. and 120s. A sale is reported from Liverpool of 162 bags at 200s. for the best. It is claimed, however, that if really fine came to London now it should, on this basis, even leave the Java record of 210s. behind. I wish it would come to prove who is right.

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Our Programme for 1920.

HAVING had a "fling-out" over the Japanese, Chinese and the opening of the Tropics, we are now going back to our original pre-war programme and shall, as before, devote our main attention to the following crops, in the order given below:—

(1) Cacao, its cultivation and preparation.

(2) Rubber, its cultivation and how to increase its consumption.

(3) Sugar, and how to increase the production within the Empire.

(4) Cotton, and the possibility of increasing supplies.

(5) Coconut and vegetable oils, their production and extraction.

(6) Coffee and its production, especially of the better grades and varieties.

(7) Fibres, their production and extraction, especially of sisal.

(8) Tobacco cultivation. The first series of fifty-one articles were concluded with the October issue, so this crop is not likely to be fully discussed again. We have the articles all ready to issue in book form directly there is sufficient demand for such a work to warrant our doing so.

(9) Rice, which varieties to plant, and how to do so to best advantage.

Arising from the above will, of course, be articles on banking and finance, on ploughs and ploughing, manures and manuring, drainage and irrigation, pests, diseases, spraying machines and fluids, and we also hope to include further articles on the use and advantages of explosives for agricultural purposes, drainage and replanting, &c. Messrs. Nobels, Ltd., are considering the possibility of coming in and working with us again, as they did up to November, 1918. If this can be arranged, the section devoted to "Farming with Dynamite" will be of even greater interest and importance than before the war, on account of the many new inventions and adaptations in connection with explosives that the war has brought about, whilst costs will probably run lower in comparison with the present high costs of labour everywhere than was the case in 1913 and 1914, when we first gave prominence to the matter.

FURTHER greetings have come to us, dated January 1st, this time from the International Institute Library of the Department of Agriculture, West Block, Ottawa, Canada, which at the same time acknowledges receipt of our latest book, in the following terms:—

"'How to Pay for the War by Developing the Latent Resources of the Empire,' by H. Hamel Smith,

Editor of *Tropical Life*. Paper, 186 pp. John Bale, Sons and Danielsson, Ltd., Oxford Street, W., London. 1918. 5s.

"The author urges the development and expansion of English trade in the Tropics, India and Latin-America, advocating special agricultural education for those regions, and recommending policies of finance and of handling native labour. One section is devoted to the question of trade relations between Russia and English-speaking people."

Rubber Production by Chinese in China.

To the Editor of TROPICAL LIFE.

SIR,—Can you or any of your readers give me an idea as to what progress has been made by the Chinese who were reported to have taken up plantation-rubber production in Hainan if not elsewhere under their own flag? I believe that those who have been most active in this respect include many returned emigrants from Malaya who, having gained much experience, thanks to the excellent training they have received over there, are now passing on their knowledge (so I believe) to others in their own land, so that they can train labour for their home estates. Has the production of rubber assumed important dimensions as yet, and if so, to what extent? In plain English, how much was produced in 1919 and how much is likely to be produced in 1920 and 1921?

Then, again, to what extent has the appreciation of the Chinese currency helped these Celestials, especially when compared with the depreciated Straits dollar, at any rate outside Malaya? Has it proved to be true, as I foretold at the time, that John Chinaman at home pays his fellow-countryman less and yet gets more work out of him than what John C. himself gave and received when in Malaya? What are the prospects in the near future of this production of rubber in China by the Chinese?

Yours truly,

December 7th, 1919. "AUSTRALIAN."

NOTE BY EDITOR, TROPICAL LIFE.—Unfortunately we can give no information on the subject. All we know of the matter, if the two reports or tales are the same, which seems probable, is from the following paragraph which we have extracted from our rubber notebook of last year. Against it is a note saying that it appeared in the *Weekly Times* of Ceylon, for September 16th, 1919, and was apparently sent across by their Melbourne correspondent in a letter which left Australia on August 27th, 1919.

"Melbourne, August 27th.

"There is a considerable development of the production of rubber reported from the island of Hainan, which belongs to China, and whose port is Kinngchow. The actual cultivation is at present chiefly undertaken by returned emigrants from the Malay States, and it bids fair to develop into an important industry. Since 1910 the Kinng Au Co. has planted 6,000 rubber trees in the Kachek district, and the Chi'ias Hsing Co. 4,500 trees in the Nodon district. Two years ago rubber was tapped by the Kinng Co. from 2,000 trees, while this year 3,000 trees were tapped; these producing 11 catties (a cattie equals $1\frac{1}{3}$ lb.) a day. Twenty-three piculs (a picul is $133\frac{1}{3}$ lb.) were sent to Singapore, Hong Kong and Bangkok during the year. Export is made in sheets measuring on an average 16 inches in length, 10 inches in width, and $\frac{1}{4}$ inch in thickness. Prices obtained from the last shipment realized only 48 dollars per picul, whereas the first consignment sent to Singapore brought 100 dollars a picul and was reported to be of first quality. Some months ago Sir J. Shun, a Cantonese merchant, obtained a grant of 500,000 mow (a mow is equivalent of 0·2 of an acre) of land on which to grow 5,000,000 trees. When they are in a flourishing condition he guarantees to pay a royalty of 5,000,000 dollars to the Government. Last December three planters arrived from Singapore to open up parts of the estate. The Chi'ias Hsing Co. has not yet commenced tapping."

Rubber Notes.

EXCHANGE AND RUBBER.

THANKS to Mr. L. C. Brown, we have a copy of the long leading article out of the *Pinang Gazette* for December 19th, which is mainly devoted to criticizing what our Editor had to say in an article that he contributed to a special Plantation Number of the *India-Rubber Journal* of London, that appeared last November, on the actual and possible effects that the rise in the price of silver (which has since topped 88d. an oz.) and of the rupee may have on the plantation rubber industry of the East.

At first we could not make out the gist of the line of argument adopted by our contemporary and then found that it was based on the exact opposite of what we said as to the causes from which we argued, the rubber industry might suffer. Our Editor claimed that "for some months to come we must *not* look for a fall in the price of silver or of the rupee and must therefore finance our rubber estates and Eastern accounts generally on that basis"—basing his article on this fact.

The *Pinang Gazette* left out the word "not," so they stated in print that "for some months to come we must look for a fall, etc., etc.," and concludes by saying that "we are wondering what the financial experts, that the writer in the *India-Rubber Journal* believes to exist in Malaya, think about it." We are, in our turn, wondering what those who have read the original article in the *India-Rubber Journal* think of this little blunder of the *Pinang Gazette*.

CARS AND TYRES IN U.S.A.

Rubber planters, dealers and tyre-makers will be interested in a long table published by *Current Opinion* for January, page 113, for it gives, State by State, the number of automobiles owned and run in America, viz., 6,353,233. Ohio comes first, with 464,826 cars; New York second, with 436,932; Pennsylvania, with 407,923, comes next; whilst Illinois is fourth, with 401,371 cars. The cause of this detailed table seems to be due to the fact that the Inland Revenue considers that a taxpayer with a family and less than $2,000 a year, or a taxpayer without a family with less than $1,000, cannot afford a car, and so claims that

6,353,233 schedules should have been sent in for revenue purposes, whereas only a third (2,146,265) of the returns have been received. Now, apparently, they are investigating the affairs of the other four millions to ascertain whether they should not be sending in returns on which taxes could be levied.

To us the matter is interesting, because we reckon the 6,353,233 cars should consume four times that number of tyres, and 25 millions of tyres will consume a lot of raw rubber. If we ran only two million cars in the U.K. we should be a far better customer, for our own producers of one of the most important, if not actually *the* most important tropical crop for other than human consumption.

This healthy demand for new cars and therefore for new tyres in America, in England and elsewhere, as well as for new tyres for old machines left standing more or less since 1914, will not pass in a moment, it will take long to satisfy. A motor tyre has many things in it besides rubber. The cotton content alone will hang up or defer full satisfaction being given to the demand for many months to come. It can be taken, therefore, that a strong, even, steady demand for rubber for motor tyres alone will continue throughout 1920 and 1921. This is enough to trouble about at the moment. Then, of course, there are one or two other things in the world into which raw rubber finds its way as an important ingredient. Still the demand for tyres must remain far and away the greediest of all the mouths to be fed and the most insistent on having its share, because it can pay for it, whoever else has to go short.

"The World's Rubber Position."

We have to call attention to the above useful little monthly, which continues to make its welcome appearance on our table and costs but the modest sum (for these days) of 30s. as its annual subscription, or 4s. for single copies, of Messrs. W. H. Rickinson and Son, 3, Great Winchester Street, London, E.C.2. In face of the extent of the work involved in compiling the lists given and the time saved, as with ourselves, in seeing at a glance how we stand at any moment with regard to demand, supply, i.e., yields, &c., or costs, this book must enjoy a very large circulation. If it does not there are more unwise rubber men in the world than we can credit, as we cannot imagine any first-clas authority not having it handy.

A dozen lines in it answered a query we have been asking ourselves and others for days past, viz., What will the world need and what will it get in the way of raw rubber during 1920-21? According to Messrs. Rickinson's tables we shall get all the rubber we are willing to pay a fair price for, and we shall need all the rubber that labour (in those industries supplying motors, &c., in which rubber is used) will allow us to consume during the coming year.

As Labour's whims are entirely uncertain, the tables included in the book under notice give figures according to the rate at which Labour will allow an increase to take place, whether one-twentieth or 5 per cent. more up to 40 per cent. increase. Thus on the basis of an actual world consumption of 320,000 tons of rubber in 1919 (a very low figure, which America's demand alone, if only fairly well satisfied this year, would leave well behind) the percentage of increase would work out (say Messrs. Rickinson):—

On 1919 Gives for	At 5 per cent. Increase Tons	At 15 per cent. Increase Tons	At 30 per cent. Increase Tons	At 40 per cent Increase Tons
1920	336,000	368,000	416,000	448,000
1921	352,800	423,200	540,800	627,200
1922	370,440	486,680	703,040	882,080
1923	388,962	559,682	913,952	1,234,912
1924	408,410	643,634	1,188,137	1,728,876

As the world has been, comparatively speaking, starved for rubber, even a 40 per cent. increase in 1920 is not out of the way, but anything in the way of restriction of output or a prolonged strike in the U.K. or U.S.A. would render such a demand impossible.

So much for the demand; for particulars as to how the world stands for past and future production and a hundred and one other important details in connection with the rubber producing industry we must refer our readers to the book itself. It would not be fair for us to say more than we have done to show how carefully and systematically the tables are drawn up so as to be as elastic as the rubber itself.

Messrs. Lloyd, Matheson and Carritt's Estimate.

Thanks to the courtesy of Mr. Andrews and Mr. Fraser of the above firm, we are also able to include the following tables:—

Estimated Supplies of Raw Rubber for 1920.

	Tons.
Plantation Rubber, say	360,000
Wild ,,	35,000
Stock in London and Liverpool, Dec. 31	25,000
,, in the East and afloat	70,000
,, in Manufacturers' hands in U.K. and U.S.A.	100,000
Gives us to draw upon in 1920	590,000

Estimate of Consumption (all kinds).

	Tons
U.S.A.	280,000
U.K.	50,000
France	30.000
Central Powers	30,000
Elsewhere	40,000
Total	430,000

Past Production and Prices of Plantation.

	Tons	Average Price s. d.
1910	8,200	8 9
1911	14,419	5 5½
1912	28,518	4 9
1913	47,618	3 0¼
1914	71,380	2 3½
1915	107,867	2 6
1916	152,650	2 10¼
1917	213,070	2 9¾
1918	200,950*	2 3½
1919	340,000†	2 1¼

* Amount shipped. † Estimated.

The Incorporated Society of Planters, F.M.S.

The above society has been founded in the Federated Malay States. As its name implies, this is a body incorporated by law, and was registered, under a licence from the Chief Secretary, F.M.S., as a society not for profit but for promoting useful objects not involving the acquisition of gain. It is not and cannot become a trade union. A trade union is any combination for regulating the relations between workmen and masters, or for imposing restric-

tive conditions on the conduct of any trade or business. The rules of trade unions are usually in restraint of trade.

We are told that the society is after the exact opposite, since it has been formed to develop and increase the trade of the F.M.S.

The I.S.P. does not seek to interfere with individual freedom, initiative or enterprise. Under the constitution, we are told, it is unable to support with its funds or to endeavour to impose on or procure the observance of any regulation or restriction which, if any object of the society, would make it a trade union. Its success is assured, and its value to the planting profession will be fully realized in the near future. The advantages of the society to those eligible for membership cannot be too strongly urged. Every planter connected with the F.M.S. who is not already a member should join without delay.

For particulars as to subscription, &c., apply to the Secretary, Incorporated Society of Planters, Kuala Lumpur, F.M.S.

Agricultural Progress in ex-German New Guinea.

To the Editor, TROPICAL LIFE.

SIR,—I am sorry that for your article, "What of the Pacific Islands," on p. 66 of the issue of TROPICAL LIFE of May, 1919, you had not the figures relating to these Possessions so that you could have included those for Papua (British New Guinea), as they will bear comparison.

The area under cultivation by Europeans (and a few Asiatics, Japanese, Chinese, &c.) in the Bismarck Archipelago is about 130,000 acres, besides another 35,000 or so owned by natives. The estimated number of coconut trees (based on exact figures of many big companies and plantations covering about two-thirds of the total, with the rest estimated from actual returns) amounts to seven millions (7,000,000). This includes the few small groups of islands you specifically mentioned.

The total value of exports (all agricultural) for 1918 amounted to £414,149. They will this year probably touch the half-million if the shipping is not interrupted. The copra returns alone (i.e., exclusive of other agricultural produce) in 1918 were 21,200 tons and will probably reach 27,000 tons for 1919.

The 130,000 acres or so owned by Europeans—mainly coconut—comprise some 325 separate plantations.

The Government has at present a plantation (in various stages of development) at each outstation in the Possessions, making fourteen in all, besides a Government farm and extensive botanic and experimental gardens at Rabaul.

Can you advise me as to where I can get a book or treatise dealing with, or can you refer me to authorities on (1) goats; (2) Javenese cattle?

Yours sincerely,

HOWARD NEWPORT, *Major.*
Director of Agriculture.

Rabaul, New Britain,
ex-German New Guinea.
October 20th, 1919.

Economic Zoology.

Our Motto: "Utilization not Extermination."

PRACTICAL PROPOSALS FOR PRESERVING TROPICAL BIRD-LIFE.

IT will be remembered that in our November issue we reproduced a letter from the columns of the *Observer* which our Editor wrote in the interests of bird-life and the bird-plumage trade of the Tropics. Since then several letters from the extremists have appeared in the Press, all condemning the trade, as "Pussyfoot" does the making and consumption of intoxicating liquors, simply because they do not like it. So long as funds are forthcoming to run these and other "anti-" campaigns they will continue until, as in America, it will be found that you can be intemperate even in temperance and poison people when you believe you were only forcing them to be sober.

As there were signs of the same trouble affecting the preservation and the consequent increase in the birds of the Tropics, our Editor addressed a second and longer letter to the *Observer*, which that paper was good enough to publish on January 4th. Included in this letter were the following paragraphs:—

"Whatever may be the case in the United Kingdom, no Plumage Bill can save the birds in the Tropics. As I said before (see my letter in your columns on July 20th), it will only be when the collection of feathers and bird skins is encouraged that there can be any hope of bird protection abroad. I do not mean in those little islands which no trader thinks of, but in India, Brazil, &c. Encourage, do not drive away the demand and then and then only can you hope—with proper organization—to see bird-life increase throughout the world and not grow less and less as the builder and trade-exploiter (not the bird traders) drive wild life more and more inland or exterminate it along with the trees and country or forest growth, now disappearing by miles everywhere.

"You cannot expect to have wild birds, especially tropical birds, as used in plumage, near habitations; neither can you prevent those habitations from ever and ever throwing out new tentacles. . . . It is only by interesting the world at large in these birds that you can keep them from extermination. Create an honest demand for their products as we have done for sugar, tea, cocoa and coffee, and then, as with these crops that were originally only found here and there in the bush and jungle, will the birds of the Tropics breed and multiply, even as the coffee shrubs on the hills of São Paulo or the tea plants in India and Ceylon. But continue, on the other hand, telling untruths about the trade and you will find that most of the birds will practically become extinct in a generation or two, thanks to those, and those only, who, I am willing to own, honestly imagine that they are the only friends the birds have on this earth."

"THE public . . . is encouraged to believe that this is a Free Trade country. Free Trade has ceased among us. Capital has discovered that, after a certain point, competition is wasteful."—*Observer.*

Sisal for Selling.—No. XIV.

EX-SOLDIERS AS GROWERS. QUERIES ANSWERED. FIQUE AND SISAL AS TWIN CROPS IN THE REPUBLIC OF COLOMBIA.

(*Continued from January issue, p.* 11.)

ARISING out of the notes embodied in the previous article on sisal growing, some half-dozen letters to hand asking for further information has caused us to believe that possibly some of the replies sent may be of use to other readers, especially those further afield, who often wonder whether it would be any good to write or not. To all such we will say, no matter what distance you are away, no matter how old the article may be when it comes into your hands, or when you resurrect it, always raise any query, trivial or important, that you want answered, and we will do our best to answer it. At the worst we can only express regret at not being able to do so, whilst if we can reply it refreshes our memory, which is as well, for it is becoming a shockingly bad one at times in its old age.

We were pulled up, not for the first time, on the question of yields—half a ton a month; that is very small. Well, so are forty nuts to a coconut palm, but they have to be accepted as a fact, generally speaking, when preparing estimates on a big scale. Mr. Wells, whose article we quoted, also was prepared for such queries, as he told us in a footnote, that it is quite possible to take off a ton of fibre or more during the first years, and that he had actually secured over a ton and a half (31½ cwt.) of fibre per acre at three and three and a half years after planting.

Further queries as to yield above half a ton caused us to warn the greedy ones against the mistake of expecting too much at the start. Go slow at first and you get more in the end. Mr. Wells says heavy crops at first are not good business. "During the first year," he said, going into details, "and for each year after, 300 tons of fibre should be produced from the 600 acres suggested as a settlement area for the twenty families or men (at 30 acres each). This, at £25 per ton at port of shipment, equal in normal times to an average price in London of £30 per ton, would realize 300 × 25 = £7,500. Against this, the cost of maintenance of the men and their families, with transport to the port of shipment and other expenses, are estimated to cost rather over £8 a ton, or £2,600, leaving a gross return of £4,900. From this must be deducted a sum of £1,350, sufficient to pay off a debt of £10,000 in ten years at 5 per cent. interest, and the balance will still give each member a clear yearly income of £177 10s., or, including the amount allowed for maintenance, £255 10s. After the ten years, when the debt is paid off, each member's income should be £323—less a reasonable amount to be kept by the company running the settlement, for a reserve, say, £300 a year net."

This is an excellently worked-out scheme. Those who want to criticize the amounts must still allow that the principle on which they are drawn up is practical and worth following. Being of this opinion is why we have reproduced that paragraph in full.

Those who, like ourselves, are anxious to see English interests extended throughout Latin America should remember that we have an excellent fibre expert in the Republic of Colombia in the person of Mr. M. T. Dawe, who, after being in two fibre districts in British and Portuguese East Africa, went out to Brazil, and later was agricultural adviser and director of agriculture to the Government of Colombia, with headquarters at Bogotá. From what he has reported from time to time, we have no doubt that considerable areas could be planted with sisal in many portions of Colombia with advantage. Mr. Dawe, it will be remembered by fibre men, called widespread attention to the *fique* fibre of that Republic. At the time he was good enough to write us at length on the matter, and from his last letter dealing with the industry (dated March, 1916), it would seem that the two fibres, fique and sisal, can be grown together with advantage as we were told. "A typical view of the Bogotá Valley shows an area whose climate and soil conditions are admirably suited, not only to the production of *fique* on the upper parts, but also to sisal on the lower slope of the valley. Sisal, by the way, is generally regarded as a better fibre than *fique* and usually commands a better price, and there seems no reason why sisal should not be grown in the lower parts of the valley on a large scale. In such parts it would prove less costly to transport to the factory than *fique*. This latter fibre grows better in an intermediate climate, so it is necessary to choose the upper part of the hills, and for the transport of the leaves to the factory it is essential to erect cableways in these districts.

"There appears to be some confusion regarding the identity of sisal in Colombia. Sisal is the fibre of *Agave sisalana*, while *fique* is the fibre of a fourcroya, *F. gigantea* or *F. cubensis*. Sisal does not appear to be in general cultivation in this country, the only place where I have seen it growing being at Juntas de Apulo . . . Substantial outputs of *fique*, on the other hand, are possible. I am informed that in a certain municipality of some 7,250 inhabitants the output of *fique* by hand preparation amounts roughly to 100,000 lb. annually. This means to say, on the basis of 5 lb. of dry fibre as the output per man per day, that this production consumes 20,000 days' labour, which could be done by a single modern decorticator within a period of fifteen to twenty days.

"My principal object in drawing attention to this subject is twofold, the first being the encouragement and development of the fibre industry, so that if possible it may become a staple one second only to coffee in importance. My second object is to bring about the cheaper production of sacks for local use and export. It is a proverbially bad policy to put all one's eggs into one basket; financial ruin has often followed such a course in planting industries, as with coffee in Ceylon in the 'eighties. I therefore believe that *fique* will prove a help and stand-by for Colombia for several important reasons, provided that the cultivation is carried out on a large scale and the extraction is done by machinery. It may be claimed that *fique* is not a suitable fibre for sacking, it being less adapted for close weaving than jute, but there

appears to be no reason, from sacking that I have seen, why sacks to meet all local requirements should not be made from it.

"The prospects of establishing an export trade in *fique* and sisal depend on the development of this industry in the interior parts of Colombia within reasonable distance of railways and waterways. I expressly state in the interior parts, as there is no doubt whatever that there are great possibilities for establishing an export trade in sisal along the coast regions. With the interior districts, however, there is the cost of transport to the coast, and we must carefully examine the cost of production and freight charges to the U.S.A. and to Europe before we can truly say what prospects *fique* and sisal have of becoming a new industry for the interior.

"I fear that we have but very little definite data on the subject of the costs of production. I am told that the 'all-in' costs of production here, using small single-leaf decorticators, amount to about £12 per ton, so with modern decorticators the cost should not exceed £10. Such a sum compares favourably with other countries.

"The costs, so far as I can make out, are approximately as follows ($ = 4s. 2d. or current rate):—

	Per ton
Cost of production	$ 50·00
Transport from estate to Girardot	5·00
Freight, Girardot to La Dorada	10·50
Freight, La Dorada to Coast	7·35
Ocean freight (usual) to New York...	15·68
River Tax	1·60
Commission, brokerage, &c., say	5·00
Total Cost in 1916	$ 95·13

"In the distributing markets, at any rate in New York, *fique* may be valued slightly lower than sisal, but even then with the prices likely to be ruling for some time, and with freights at a more reasonable figure, a profit should come to the producer of £5 to £10 a ton, according to locality and cost of transport to port of shipment. Meanwhile much more fibre can be produced than at present before the local demand will be satiated, and as long as such inquiries have to be satisfied, still higher returns can be looked for."

From subsequent letters we believe that more will be heard of Colombia as a fibre-producing centre; we certainly hope so.

(*To be continued.*)

WE hope that the new play at the Haymarket Theatre will have a good run. We went during the last week to see "Daddies," the previous play, and found it going as strong as ever, so that one found it difficult to think of its coming off. But then, what play ever did out-stay its welcome at the Haymarket? None, so far as we can remember, and that is a long time. The new play has rather a quaint title, one that should appeal to tea-producing centres. It is called "Tea for Three," and as Fay Compton, A. E. Matthews and Stanley Logan are of the party, we should imagine that a great many more than three —three hundred possibly—will be present every time that tea is ready.

Tropical Development and Banking.

THE Elder-Dempster boat *Onitsha*, which left for West Africa just after we went to press with our January number, had on board Colonel Charles Young, of the U.S. Army, who is going out to Monrovia, Liberia, to relieve Colonel Green, as U.S. Military Attaché. On the same boat were, we believe, Captains Bean and Atwood, who are to reorganize the Liberian Frontier Force, whilst all of these and other officials are interested in the development of Liberia's resources, to bring about which America has sent some of her best men to help. Their number includes Mr. O. W. Barrett, of Philippines fame, who goes out as Supervisor of Agriculture in connection with the American loan of $5,000,000 for development work, especially economic development. Under the new President, now a King in Liberia, we trust that this Republic, with the help of America's experts and money, will go ahead and make good, as Nature always intended she should do.

Owing to Mr. Barrett being up at Liverpool whilst waiting for the *Onitsha*, we did not meet, but he has gone off with letters of introduction to leading planting experts at Accra, &c., and Mr. Race, the Secretary of the Colonial Bank, was good enough to give us useful letters of commendation for Mr. Barrett when at Accra or other important branches of the Bank along the Coast, a chain of connections which we hope that, now Liberia is going ahead, will soon include an important establishment in Monrovia itself.

This reminds us that the Colonial Bank now can well be said to have its fingers on the pulse, and in fact to be part of one of the most important of our Imperial banking concerns. So extensive have become its ramifications that even we are not quite sure where it is and where it is not, except that it is *not* in Brazil yet. When that mission to which we referred last month in our Japanese Supplement is sent up the Amazon, we mean to see that the master-mind in it is brought into touch with Mr. Hewett, the Manager of the Colonial Bank in London, as then our friend may succeed in inducing the bank or its allies to push out tentacles to South America similar to those which the bank has in Africa and elsewhere. Africa has tremendous potentialities, but the Amazon Valley and the cotton belt to the south of that valley have more, and they are not all. Take this cotton belt, these million square miles from Pernambuco, to Piauhy, Sergipe, and then further south, probably into Argentina itself, it could swallow the best part of China's population and still not be overcrowded, whilst the cotton it would then turn out (say, twice the American output as a start, provided we had no Government control to keep prices up to the retail buyer over here) might possibly bring the prices down to reasonable proportions. This is looking ahead and the Economic Mission up the Amazon has yet to start, but that does not alter the fact that Professor E. C. Green, the American Cotton Expert, now in Pernambuco, is busy laying the foundations of an immense future for the producton of long-staple, good quality cotton in Brazil (be it remembered that Egyptian cotton came from Brazil, mainly, we believe, from Pernambuco), and given the labour, the land

being there, the money will soon come, and this is where the Colonial Bank and its present and future allies will come in.

We propose to "tap" Barclay's Bank, for that leading institution has long been a substantial shareholder in the Colonial Bank; then there is Sir Herbert Hambling, Deputy Chairman to Mr. F. C. Goodenough of Barclay's Bank, a Director of the Colonial Bank, and Head of the London, Provincial and South Western Combine. Canada can be tapped for this Brazilian development work via their premier bank, the Bank of Montreal, which has acquired a substantial interest in the Colonial Bank, as has also the National Bank of South Africa. A more even channel, therefore, for the ebb and flow of capital and trade from all portions of our Empire to help develop Brazil and benefit the Empire is not to be found. When, therefore, the Court of Directors see their way to step from Barbados to Manoas, and then up to Belem (Pará) and down to Rio and elsewhere, the future prosperity of this country in the economic development of Brazil will be assured, whilst the profits that would accrue to the bankers will be assured and substantial, for there is still the Amazon and the Sao Paulo-Canadian-United States coffee traffic, neither of them insignificant even to start on.

The *Daily Telegraph* echoes our sentiments when it claimed that "there is an inclination in these days, when so much is heard of profits and excess profits, to attribute too much influence to the lure of gold. It is the sporting instinct of our race, the love of adventure, the desire to be first in blazing the trail to the Southern Cross, which has tempted men to risk their lives."

The above referred to the England to Australia flight, over which, as our contemporary claimed, the whole Empire, and Australia in a special degree, will cordially echo the congratulations which the King has sent to Captain Ross Smith on the triumphant conclusion of his great flight. The intrepid airman and his three companions reached Port Darwin on Wednesday, December 10th, after an aerial voyage lasting just under twenty-eight days. The makers of the machine were not forgotten, for the Air Ministry announces that messages of congratulation were sent to Messrs. Vickers Limited, constructors of the Vickers-Vimy machine, and Messrs. Rolls-Royce, Limited, the manufacturers of the engines with which the machine is equipped. Sir Frederick Sykes, Controller-General of Civil Aviation, sent sincere congratulations to both firms on their achievement "in providing the winning machine for the Australian and Atlantic flights." The Air Council sent the firms congratulations on "the great feat of building and equipping the machine."

"Pussyfoot" and the Californian Wine Industry.

What will become of California, one wonders, now that the United States has had to go dry? The President of the California Association of Grape Growers claims that their crop of wine grapes totals some 400,000 tons, raised from 170,000 acres by 8,000 growers, employing directly or indirectly some 50,000 people. What becomes of these people and the grapes under Pussyfoot law? Meanwhile it is said that the sale of deleterious drugs is growing apace. If its progress proves in any way worthy of its start, then Pussyfoot law in "dry" America may claim as many victims as the War before relief comes. Perhaps the victims will be classified as drunken undesirables, and their absence preferred to their presence with the idea that in time their kind will die out. "We" are rather keen on temperance ourselves, but do so dislike being forced to be good by law. IF anything could make us bad, it is that. Probably others are like us.

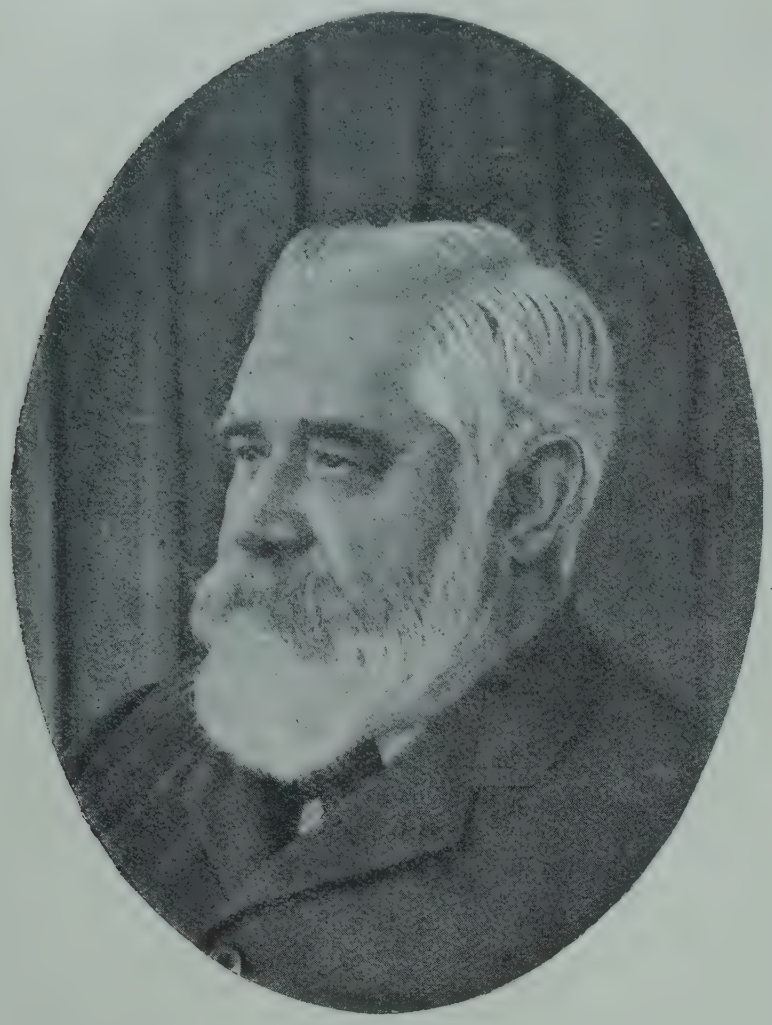
We consider this year's pantomime at old Drury Lane to be the best one they have had for a long time, certainly since Christmas, 1913, and then it would be a question of quits. Miss Lily Long is alway amusing and makes the most of her part, but we are not quite so prepared to say that the part makes the most of her powers of amusing one. "All the crowd," however, are in excellent trim and kept the house amused throughout. Will Evans, Marie Blanche, Florence Smithson, Stanley Lupino, and a lot more almost as clever; no wonder it is a good show.

(*Continued from p.* 24.)

River, and in 1914, to the Mahdia Valley, where, at 2,100 feet, they found bauxite up the Eagle Mountain.

In other matters Profesor Harrison has been elected President of the Royal Agricultural and Commercial Society in Demerara, and was appointed by the King a Member of the Colony's Executive Council.

Many appreciations have been published on "Our Friend" and his work. One of the best appeared quite recently, September, 1919, in the *Journal of Industrial and Engineering Chemistry* (Vol. II, No. 9, p. 874), by Mr. C. A. Browne, of the New York Sugar Trade Laboratory: "All doubts as to the fertility of sugar-cane seed were finally overcome," he told us, "by the independent and almost simultaneous proof of the fact by Soltwedel in Java in 1887, and Harrison and Bovell in Barbados in 1888. The discovery was most opportune, as the old Bourbon cane had commenced to degenerate, it had declined in vigour and was succumbing to fungus disease, so that it can be claimed that the sugar industry of British Guiana, threatened with extinction, was saved by the use of the hardy seedling, which Professor Harrison brought into use. As a result, whilst in 1897 British Guiana had only 600 acres planted with seedling-canes out of 70,600 acres, in 1918 only 8,350 acres were under the Bourbon cane whilst 69,475 were planted with seedlings." The British Empire owes a good deal to Professor Harrison, but if his work in connection with the production of cane-sugar was all we had to thank him for, and it is not so by any means, he would still deserve to be very much better known on this side than he is at present, nor as, we fear (knowing his tendency to hide his many lights under many bushels), he ever will be; that, however, does not detract from the utility and importance of the work he has done during the past forty years and more, 1879-1919.



"Tropical Life" Friend.—No. 176.

Professor John Burchmore Harrison, C.M.G., M.A.(Cantab.).

Director of Science and Agriculture, British Guiana.

We are used to having plenty of data to chat over concerning the subjects on this page, but when we allow our mind to wander back to when Professor Harrison first went across to British Guiana (that was the year before our first visit to the West Indies, so must have been in 1889, nearly thirty-one years ago) we let loose a very Orinoco's flow of reminiscences to be condensed or, worse still, to be left out for want of room in the one page.

In spite of this Professor Harrison has always kept out of the limelight and avoided publicity of every description, so that whilst other men, who were in their nurseries or at school when "Our Friend" was laying the foundations of his present-day reputation, have grabbed much glory and shekels unto themselves, this man, working quietly, persistently, perseveringly, year in and year out, first in Barbados and then in British Guiana, has had no recognition, except a C.M.G. in November, 1901, to show how much thinking men have appreciated his work. Yet it has been most useful both for itself, and also and especially as a basis from which other and later scientists have been able to start and on which they have felt they could safely build up their own research work. You can be over-modest; if Professor Harrison has a fault, this has been his failing. Perhaps he has been too busy helping start the development of the resources of the Empire to realize that the public,—and even leading politicians, know about as much of British Guiana as the Professor does of what the German Royal Family will be doing in five years' time. We suppose this lack of knowledge of our stay-at-homes concerning our tropical possession can only be regretted, it can, apparently, never be remedied.

Right away back in 1873 and 1874, Professor Harrison was studying chemistry, physics, geology and minerals in the Midlands at home, and came out with flying honours and a medal as a result. This is getting on for fifty years ago; no wonder that he can write on the geology as well as on the flora and agricultural industries of British Guiana as he is doing and has done. He secured his M.A.Cambridge in 1886, following on the B.A. in 1877, and many other honours, always on scientific subjects, and became a Fellow of the Institute of Chemistry in 1887.

Long before this, "Our Friend" had been at work in the Tropics. In May, 1879, he was appointed, on the selection or recommendation of Professor Liveing L. Dewar, of Cambridge, Professor of Chemistry and Agricultural Science at Barbados, where his reports on water supplies, of 1882 and 1883, also in 1885, 1886, &c., are well known to those interested in such things. During this period Professor Harrison's investigation and experimental work in connection with sugar-cane culture has since proved most important to sugar estate owners and managers. To-day everyone investigates and experiments, thirty years ago no one did if they could help it and then in a very half-hearted manner. In 1889, the year "Our Friend's" services were transferred to British Guiana, saw, if we remember rightly, the first lot of sugar made from seedling-canes. Professor Bovell and "Our Friend," having discovered the year previous (1888) that the seeds of the sugar cane were fertile and could be utilized. This has proved a most important discovery, for we all know what a part seedling-canes have played in sugar production since.

On being appointed Government Analyst and Professor of Chemistry to British Guiana, the seedling-canes went with him and the first canes were raised in Demerara in 1890. Rice-growing coming to the front, "Our Friend" was naturally on the Rice-growing Committee in 1895, and was giving evidence before the Royal West Indian Commission when we were out there in 1897.

The year 1899 found Professor Harrison appointed Consulting Chemist to the Imperial Department of Agriculture for the West Indies, and the next year he paid a special visit to New York and Washington at the invitation of the U.S. Government in connection with their imported sugars, for which work he was thanked by the American Government. In 1902, on the death of Professor Jenman, "Our Friend" was placed in sole charge of the Government Agricultural Investigations in British Guiana; in 1904 he became Chairman of the Board of Agriculture, followed in 1905 as Director of the Consolidated Departments of Science and Agriculture.

He also undertook innumerable geological and scientific expeditions, as to Grenada and St. Vincent in 1895, N.W. Guiana in 1897, the Essequibo, Potaro, &c., in 1898, in Mazaruni and Puruni in 1899, and more lately, in 1912, to the Hoorie Mine, Barama

(*Continued on p.* 23.)

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Tropical Life.

FEBRUARY, 1920.

Cotton Production within the Empire.

HOW TO ENCOURAGE AND DISCOURAGE THE MOVEMENT.

BY THE EDITOR.

THE figures quoted by Sir Leo Chiozza-Money on page 5 of the London *Observer* of February 8th and reproduced on p. 29 of this paper, showed that we had to pay America some £125,000,000 last year for raw cotton alone out of a total of £295,000,000, remitted to the United States for raw materials and food-stuffs. These large amounts are the main cause of our having to remit so heavily over there just now when the value of the sovereign is daily growing less and less and when, at the moment, no one can say when a permanent turn in its value will come. On page 15 of the same issue we were reminded of the need for several reasons of seriously trying to produce some, if not all of this cotton, within the Empire. This most necessary object will, I should like to claim, never be attained unless those seeking to bring it about strive to do so on lines entirely different in several respects to those adopted by the officials of the British Cotton Growing Association right through from the start.

As a small but original subscriber to the funds of the old B.C.G.A. I will beg to offer a few of several suggestions which have been forcibly driven home to me during the many years that I have sat up and watched for the success of that body; a success which was so often promised but which never came.

The following suggestions are not all my own, some have undoubtedly occurred to me through conversations that I have had with those who came to discuss the progress or the lack of progress, in the career of the B.C.G.A. and what chances it had of finally becoming a success.

If the results of the Empire Cotton Growing Committee, who, it seems, are to carry on the work of the B.C.G.A., are to prove of permanent benefit to this country, may I ask the members to consider the following items:—

(1) Start from the beginning to run the production of raw cotton within the Empire on practical, paying lines, or else not at all, i.e., run it to pay dividends fairly earned or drop it at once. When you do start therefore, cut your losses as soon as they become apparent and dismiss incompetent men, be they Directors or others, as soon as it is realized that they are the cause of such failures. We have not so many millions or half-millions of money to throw away to-day on patriotic but impractical schemes as we had earlier in the century, and if therefore the new scheme is to be of lasting benefit to the Empire let us make sure that it is based on the most rigid practical lines and will provide profits for all concerned as well as for those who charge us 10d. for a reel of cotton and correspondingly high prices for piece goods.

(2) To help bring about this success let those in control of the production side of the proposition be made responsible to a Committee of three or five expert commercial financiers who are not interested in cotton itself but who are well versed in trade figures and would therefore be able to watch the rise and fall of the profit and loss account and say exactly when a halt must be made and a loss cut or further sums be voted to increase the scope of work in any particular producing area.

(3) Issue only plain straightforward reports every year; do not bury what few facts you have to lay before the public under a mountain of ambiguous figures and statements which no one can understand. Show exactly what increase in bales are directly due to the money that has been spent, remembering that the subscribers will look for this as they are not interested in knowing the indirect benefits that may have accrued in individual cases. They are "out" for one object only, viz., to permanently increase the production of raw cotton within the Empire. Let your reports, therefore, plainly show whether an increase has or has not taken place.

(4) Choose courteous and tactful officials and run a public information department with headquarters in London, leaving the technical side of the scheme for Manchester or Nottingham if thought fit. The headquarters and the public meetings of an Imperial Cotton

Growing Committee must be in London, the hub of the Empire, if full financial success is to be obtained. Also, if you want the public's money to come in freely you must expect the public to seek for information and to expect clear and courteous replies, otherwise they will have no confidence in you. They will even become unaware of your existence. The surliest letter (in answer to an offer of help) that I ever received came from the old B.C.G.A. when it was in the second year of its existence. What was the result? I at once felt that no scheme run under such a policy as regards willingness to co-operate with London could possibly succeed, and although I believe later on that a change was made, I never felt able to recommend anyone to support the Association, and I do not feel that I did wrong in my estimate of their inability to succeed. It must be remembered that whatever the officials expected, the public that I came into touch with felt sure that if the production of cotton within the Empire was in any way a possible proposition it must be a paying one, and there were no signs of a dividend from beginning to end. Naturally, therefore, the Asociation was left alone.

(5) The great reason for making London the headquarters of the scheme would be for publicity and financial reasons; to get the proposal well known and discussed as they must be if success is to be obtained. To begin with the question of exchange. London must always take the lead in any effort to make the English sovereign rise to par again, though, of course, Manchester who has to pay for the cotton she uses is equally keen to reduce the premium on the dollar. If, therefore, the scheme has to be financed on an Imperial basis (as it should be if the confidence of the people of Greater Britain is to be secured) and not merely bolstered up, this can be done far better from and through London than when buried away up in Liverpool or Manchester. Speakers up at Manchester testified to this when they said that the proposals made affected not only Lancashire but the whole of the Empire. Since we are all agreed on this point let us therefore run the public headquarters from London where the chief meetings should be held, leaving the branches and auxiliary meetings when needed for those centres that are actually using the cotton.

How often in the past have the public been twitted for taking no interest in this important question of assuring the supply of raw cotton for Lancashire. But is it true that they did not do so? I never found, judging by the visitors to my office, that the public were at any time indifferent to the scheme; they watched it continuously, but had no confidence in it. Certainly they are very much alive to the unnaturally high price of the manufactured articles to-day, without taking into consideration the fact that we are probably losing a further £200,000,000 or £250,000,000 in exchange each year on sums remitted to the United States, a large proportion of which loss is due to our needing America's raw cotton. What I do believe is that so long as so important an Imperial proposition is buried away up North it will not receive Imperial attention and so it will not be supported on an Imperial scale as it should be.

In the Manchester speeches the idea seemed to run throughout the remarks made that the sum to be obtained, whether one, two or twenty millions sterling, would be directly expended in the production of cotton. Supposing such sums were forthcoming, would it not be better to place the amount as security with a bank or banks and leave it there as "cover" in order to obtain larger credits against this security and use that increased amount for financing the planting undertaking abroad, &c., and over here? If the banks had sufficient confidence in the backing and controllers of the scheme they would not hesitate to advance against so golden a security even to a greater extent, with collateral security, in the shape of lands, crops, credit, &c., later on, than is usual on the amount deposited. If the banks do not show that confidence in the men behind the scheme, how can the public be expected to? But as a scheme there is no doubt it is good, if we have experienced planters to control it both here and abroad, and not merely a comparatively small number of manufacturers on this side.

Improved Methods of Cane Cultivation in India.

DR. C. A. BARBER STILL DOUBTFUL AS TO RESULTS.

THE Department of Land Records and Agriculture of the United Provinces of Agra and Oudh have issued a very useful little pamphlet which must greatly interest all readers of our book, "The High Price of Sugar," since it deals so largely with India. The pamphlet is entitled "Notes on Improved Methods of Cane Cultivation," and is by Mr. G. Clarke, F.I.C., Principal of the Agricultural College, Cawnpore, and Agricultural Chemist to the U.P. Government. Messrs. Naib Husain and S. C. Banerjee also helped in its compilation and between the three workers an excellent pamphlet is now before us. It contains the results which have been achieved in the last six years at the Shahjahanpur Sugar-cane Research Station and should therefore prove of use and interest to every sugar man at the present time, when the sugar production in India is so very much to the fore and the Indian Sugar Committee has been so busy. It shows that, thanks to the improved conditions, the out-turn of cane obtained in some of the best lands has amounted to 300 maunds of cane (1 ton = 27·2 mds.) and 30 maunds of *gur* to the acre.

The book is also a proof that Mr. Clarke and those who have the sugar industry in charge, at least in some portions of India, have proved the possibilities of Upper India as a producer and are now only working and waiting for possibilities to spread such results amongst cultivators generally.

A large number of canes from most of the cane-growing countries of the world have, apparently, been under experiment, approximately, we understand, some 120 distinct varieties. These, we are told, may be roughly divided into two groups:—

(1) Thick canes of the *poundah* type of which Ashy Mauritius and M16 are good examples.

(2) Medium canes of which the Natal and Java canes are typical.

The experiments discussed in the bulletin under review seem to show clearly that the cultivation by intensive methods of improved canes is a profitable undertaking. Thus we are told that the ordinary methods of cultivation in the U.P. in 1916-17 gave only 32·6 maunds of *gur* = 1·2 tons per acre, whereas the average yield obtained at Shahjahanpur, with nine selected varieties, worked under improved methods of cultivation from 1914 to 1919, was 838 maunds (30·8 tons) of cane per acre, with an average sucrose content of 11·1 per cent. This gave a yield of cane sugar of 93 maunds or 3·4 tons to the acre, against the two tons only that we ask for in "The High Price of Sugar." Such results give a good idea of what can be expected over a period of years, given suitable climatic conditions such as India supplies over wide areas, coupled with the right type of canes and of men to plant them, which abound in plenty, but as yet not always where they are wanted—in India.

Some, at least, of the cultivators do not stint the labour they devote to the raising of the crop, for we are told (p. 8) as many as forty ploughings with the *desi* plough have been known to be given to cane-lands by the best cultivators, and it is undoubtedly due to the stimulation which this system gives to the recuperative agencies at work in the soil that the cane has done so well. Full particulars are given on pp. 8 and 9 of the trenching and ploughing programmes carried out and the beneficial results that follow, and we beg to call particular attention to the illustrated account given of the trenching system adopted on page 10. Perhaps such a plan could be followed elsewhere, especially in parts of Latin America, with advantage, as also could, probably, the method adopted in Shahjahanpur for keeping the cane standing, by earthing it up (see illustration, p. 13, in Mr. Clarke's pamphlet, which, unfortunately, we cannot include here).

In our letter to the *Times* of January 10th, we concluded with the following paragraph, that can well be added to the foregoing remarks. Written some weeks before we had Mr. Clarke's pamphlet they foresee possibilities in India that the authorities responsible for the drawing up of the pamphlet under review, also seem to think can be looked for, once efficient organization is introduced to help the, at present, sleepy if willing partner, i.e., Dame Nature.

"Let us make a proposition through your columns to the statesmen on this side and to the leaders—especially the Indian leaders—overseas," we wrote to the *Times*, see their Trade Supplement of January 10th last, pp. 448-449. "Organize your growers of cane into one co-operative, trained army of producers. Do not trouble about acres, but map out on paper an area running into square miles and mark the spots for central factories, where roads run, or can be made to run, to them with the minimum cost of time and labour for haulage. Remember that it is easier to run a load down a slope and the returned empty up an incline. This done, then follow the idea of the United States' 200,000-acre farm on the Indian lands in Montana and Wyoming and, without displacing the natives in the area allocated, enlist their help to produce more and more cane to the areas that they own or are working, and cutting adrift the local moneylenders by paying them off, attach the numberless native producers to your *Central* and see that they do not go elsewhere. Their freedom from the slavery of the moneylender will alone make them fifty per cent. happier and more efficient. No one knows that better than the moneylenders, and they will do all they can to thwart success, but, if our statesmen and leaders cannot get the better of these agricultural phlebotomists, it is time they learnt to do so."

This idea is a timely one, for we noted in the December issue of the *International Journal* a somewhat damping paragraph for those who are determined "to get a move on" production within the Empire, written over the initials of C. A. B., which we feel must be Dr. C. A. Barber. In this paragraph the writer, whoever he is, said: "Although there is plenty of suitable land available, British Guiana is as little likely as India to be able rapidly to extend its sugar production. It is better to face facts and recognize that, while the sugar industry should be fostered in every way in British possessions capable of producing it, we must look to other countries for meeting the immediate needs of the United Kingdom. Perhaps, after all, Cuba may reach its forecast of 8,000,000 tons of sugar and the beet industry of Europe be rehabilitated before India can become an exporting country or British Guiana add a couple of hundrd thousand tons to its crop.

C. A. B."

Meanwhile the following letter, which we have much pleasure in including, has come to hand, from Dr. Barber himself:—

To the Editor of Tropical Life.

Dear Sir,—Thank you for your courtesy in sending me a copy of your December number. In it I see that your first article deals with a recent paper of mine in the *Times* Trade Supplement on "Sugar Production in India." May I ask you to extend your courtesy by inserting this letter in reply? I do not think that any useful purpose would be served by entering into a controversy on the subject of what is "sugar." The world needs this substance badly, and I must fall back on my assertion, based on the opinion of those more capable of forming it than myself, that "gur is not sugar, nor a substance from which, as raw material, sugar can be economically produced." I would like you to know, therefore, that, in the light of the general reception of my paper, including your own testimony in a recent "Our Friend" article, I am unrepentant.

In the first place, may I draw your attention to the fact that I signed my article "Sugar-cane Expert" and have never taken to myself the credit of being an expert on sugar. You refer to an article in the *Confectionery Journal*, but I am sorry to say that I have not seen this and cannot therefore deal with it. You also give quotations from a paper by Subba Aiyyar in a recent number of the *Mysore Economic Journal*, and say that you "will now watch for Dr. Barber to 'go for' Mr. Subba Aiyyar." In this I fear that you will be disappointed, as I find myself in cordial agreement with this gentleman, as far as the extracts you give allow me to judge of his paper. Subba Aiyyar refers to the success attained in South or Tropical India with the Red Mauritius cane. I am naturally

gratified at this, because I had the honour, after years of work in the Samalkota Sugar-cane Farm, of introduring this and other kinds to the cultivators of the Peninsula. This part of India's capabilities is covered by the following sentence in my paper in the *Times*: "Excellent canes of the same type as those grown in the West Indies, Mauritius and Java, can be grown in Madras and Bombay."

In conclusion, you refer to Mr. James Mackenna, the Chairman of the Sugar Committee, as another implied critic of my position. I have only to say, with regard to this, that that gentleman thanked me for my article, said that "he most cordially agreed with it," and that he considered it as "most opportune at the present juncture."

I take it that we are agreed as to the existing world shortage of sugar and the urgent necessity of making this good at the earliest possible moment. On a consideration on India's position, after a lengthy experience of Indian sugar-cane work, and the opportunity thereby afforded of an exchange of opinion with other Indian co-workers, especially when acting as chairman of the Sugar Committee of the Board of Agriculture, I reiterate my opinion "that there is no immediate prospect of India's contributing to the world's sugar supply, if indeed she succeeds in producing enough for her own needs."

I am, yours sincerely,
C. A. Barber,
Late Sugar-cane Expert to the Government of India.

The Tiled House, Cambridge,

Mr. A. W. Knapp, "Our Friend" in December, has just handed in his completed MS. for a book entitled "Cocoa and Chocolate: Their History from Plantation to Consumer." Whilst primarily a popular work, the book will include ten pages on Fermentation and discuss the makers' attitude towards the various growths.

Two communications in the London Press on February 21st go well together, although but few laymen are likely to connect them. In the Trade Supplement of the *Times*, p. 612, is a letter from the Editor of this paper warning would-be or actual planters against over-optimism with regard to the menace that pests are and always will be to the most flourishing cacao producing centre. In fact the heavier the exports and the larger the number of trees, the greater the danger, as there is so much more scope for the trouble to get busy on.

The *Economist*, p. 394, includes a résumé of the world's cacao market, in which four columns of prices are included, the first when control still had its grip on the market, and the last one giving those for February 14th, 1920, when Trinidads had touched 134s., against 90s. in the first column. What the two communications have in common is this: New York received over $2\frac{1}{4}$ million bags of cacao in 1919, against less than a quarter of a million in 1900. In face of this extraordinary increase one can well ask: What will America and the world need twenty years hence, say, in 1940, and not only what will they need, but what will they get, both of cacao and the sugar needed to go with it? If the warning in the *Times* is not heeded, and if big centres like the Gold Coast, Bahia, Ecuador and San Thomé, all of which have pest trouble, ever allow their efforts to keep the trouble in check to go slack, one can well doubt whether the present area under cacao, less abandoned estates, will prove sufficient to satisfy the wants of the world twenty years hence.

Trade, Politics, and Finance.

We are glad to hear that there is a likelihood, subject to the sanction of the Treasury, of an amalgamation being arranged between the Anglo-South American Bank Ltd., and the British Bank of South America Ltd. We hope an arrangement will soon be made to obtain this sanction for such an amalgamation can but benefit the shareholders; also, and what is far more important, it must help to push British interests throughout Latin America on a more assured basis than can be looked for when there is no "big" bank behind the traders. We wish the about-to-be married couple "Good-luck" in everyway, and hope that when made one they will do even better than when running in single harness, but even then they never had any reason to complain, so far as we can remember.

If we remember rightly the Anglo-South-American Bank is built up of The Bank of Tarapaca and London, the Anglo-Argentine Bank, The London Bank of South Mexico and America, and the Commercial Bank of Spanish America. When the amalgamation is arranged it will enter Brazil. The British Bank of South America includes the Brazilian and Portuguese Bank, and has seven branches in Brazil, also in Monte Video and other cities. This will all help to prove the fact that this, the twentieth, will be the century of the opening out and development of the resources of Latin America. Given adequate banking support, this country will have the chance of securing immense future trade connections over there, if we start now to train men to handle the business and help in the development, and support and even encourage amalgamations and understandings between our banks on the lines laid down in the important section on "Finance," included in our book on "How to Pay for the War." Here, it will be remembered, special attention was devoted to the best way of strengthening our hold throughout Latin America and how to build up the banking "machine" without which neither the men nor the capital needed are so likely to find their way there. It is high time to start, for as we are writing these notes the cable rate on New York stood at $\$3.31\frac{1}{2}$, and the French exchange $48.87\frac{1}{2}$ francs, whilst the price of silver stood at 89d. We stand in need, therefore, of pushing onwards and outwards in Latin America, as over there we shall increase our exports with the least harm and probably with much benefit to our rates of exchange on adverse markets.

Meanwhile we must not forget we have an Empire of our own to develop and one wonders why we cannot materially improve the very adverse New York exchange by producing more of the following articles, especially tobacco and cotton within the Empire, instead of buying them from America. One wonders why American cotton is over 26d. per lb. for fully middling whilst in the Trade Supplement to the *Nigeria Gazette* of December 25th, just to hand, even after increasing their buying price, the British Cotton

Growing Association are still only paying 2¾d. to 3¾d. per lb. for seed cotton. Is this a fair parity with the cost of American ginned cotton or with 10d. per reel as the retail price for sewing cotton? If we want to encourage cotton production within the Empire we must see that the producers get the full equivalent for 10d. per reel of cotton on this side.

As we stood last year (quoting Chiozza Money's figures in the *Observer* of February 8th), we could, in theory, produce within the Empire all the foodstuffs, raw materials, &c., that we imported from the U.S.A. and in paying for them—to the tune of £570,000,000, with considerably less than the £70,000,000 to send back as exports from here—brought down the value of the British sovereign in New York to its present low level. If we can produce the goods in theory one wonders why it has not been done in practice. If we drew the goods from South America, as also could be done, so far as the natural conditions are concerned, we should save money—that £200,000,000 to £250,000,000 a year and more—that the fall in the value of the American dollar is costing us, and should therefore have a substantial premium on any item on the list if produced within the Empire or at least outside the radius of the United States. Here is the list, look at it carefully and think it over—and do not trouble to write and say that the production of such crops shows no margin of profit, for if no profit is visible it cannot be the fault of the market here but of the producer.

Nature of Imports into U.K. from U.S. America in 1919.

	£
Grain	61,400,000
Meat	74,400,000
Other Foods	34,300,000
Tobacco	33,300,000
Cotton	125,500,000
Other raw materials	11,200,000
Manufactures (largely materials of industry) ...	32,400,000
	372,500,000
Other Foods, Materials, and Manufacturers for which no analysis is yet available	197,500,000
Total (estimated) ...	570,000,000

It is well to note that the *Journal* of the London Chamber of Commerce in spite of reports that America had bought up all the sugar, leaving us very much in the cold, shows that the sugar situation is a serious one in America as well as over here. If it is true that the absence of stimulating drinks over there will cause the United States to reserve 1,500,000 tons of sugar for confectionery and to make soft-drinks alone, it is not surprising, in view of the world's sugar shortage, that the housewife in America does not feel pleased. Sugar in America it seems has reached about a shilling per lb. for cane sugar, or 6d. for brown, which no one cares for. One wonders how it will all end and which country will finally prove to have been the most pinched for supplies.

There is no gainsaying the fact that the coming two years—1920-1921—will prove records in the history of tropical and sub-tropical trade and development. By the last word we do not mean company-promotion work, but the steady, perhaps grim determination of individual men who have got their all at stake and mean to succeed. We know this by the many letters to hand and by the inquiries we continually receive as to whether any new books have appeared on the subject, as well as orders for the old ones. Perhaps books on palm-oil are prime favourite, but coconuts run it close, and then come coffee, sisal, &c. Then again, had we time to do so we could considerably extend the area over which we have been striving to draw men and money to the Tropics. Beginning with the "Indian Engineer," we went to the *India Rubber Journal* of London, the *International Confectioner* of New York, the *Times of Ceylon*. In London again we contribute articles to the leading trade journals connected with sugar, vegetable oils, cacao, &c., as well as to the Trade Supplement to the *Times*, a paper which we hope will take a permanent interest in individual crops and "special lines," as well as in tropical agriculture generally. In their issue of February 14th, we had an article (in Spanish) on coconut and other vegetable oils, and on March 14th there will probably be one on the machinery needed to extract the oil.

All this of course places a heavy burden of work on the Editor, but so long as he can keep going this propaganda work will continue and, we feel sure, will ultimately do much to get the Tropics recognized by politicians and financiers on this side as well as by planters and investors abroad.

Cotton keeps high, though we doubt if the price of the raw material justifies making the housewife pay 10d. for her reel of sewing cotton. On February 14th fully middling American stood at 27·67d. for spot, going lower month by month until it stops at 21·88d. in November. Sugar does not yet seem to have touched 120s. duty paid in the open market in London, but White Mozambique touched 119s. 6d., White Java 118s. 6d., and White Mauritius 118s., with Crystallized West Indian at 100s. to 106s. Coffee seems to have been offered more freely, but prices are still firm at 156s. for dull colory Coorg, and Nilgiri up to 160s. for common bold or peaberry. Java Robusta went at 104s. to 109s. 6d., and Sumatra 112s. Plantation Rubber is quiet but goes on being sold steadily up to 2s. 9d. or 2s. 9¼d. for Standard No. 1 Crêpe and about ¼d. per lb. more for ribbed standard smoked sheet. Forward prices are higher than these rates. Against this Hard Fine Pará was 2s. 7d. spot and 2s. 5½d. for Soft Fine. Caucho Ball, 1s. 9½d. West Indian sheet balata stands at 4s. 4d. to 4s. 5d., Venezuelan Block 3s. 5d., and Panama Block fair average quality 2s. 9½d. Copra remains steady: Fair merchantable sundried £73, Ceylon £73 10s., Malabar £74; for future delivery rates are above these. Prices at producing centres seem to be on an altogether higher plane. The market at Rotterdam and Antwerp appears to be below London, but labour troubles may be restricting delivery and work generally. Ceylon coconut oil is at £116, Cochin £120. Fibre, we have no quotations for sisal at the moment. Manila stands at £64 to £80 c.f.i., according to quality. The stock lying up at Manila on February 6th is said to have been 385,000 bales, against 324,000 in 1919. Shellac is 840s. for T.N. Orange, but buyers find this too high. A.C. Garnet hard cakey to blocky is about 610s. Copper

is dearer, £119 10s. for spot and £122 for delivery four months ahead. Tin is also dearer, about £392 for standard.

The London Cocoa Market.

BY THE EDITOR.

IF you want real, useful news of the world's cocoa market do not imagine that you are going to pick it up in Mincing Lane, because if you do you will be disappointed—also misled if you are new at the work and not well up in overseas movements.

London seems to have got but one parrot phrase. It sounds as if they say Trinidads are selling at 130s. Week in and week out, you hear the same old tale until if you are wise, you will turn your back on Mincing Lane and go elsewhere for news.

I always have gone elsewhere, and am now receiving back replies to my enquiries sent across when I first realized the futility of trying to find out things second hand.. Having a great respect for Mincing Lane, I am quite sure that this reticence and assumed ignorance as to what is going on, suits its interests admirably, it certainly enables busy men to avoid having to work out how the fluctuation in the New York dollar quotations are affecting quotations to other centres "to arrive." This is one difficulty I have been trying to overcome for some time, so was not displeased to come across the following note from Messrs. Edgar Tripp and Co., of Port of Spain (Trinidad), which touches upon the subject. "New York quotations for Trinidads started on December 1st at 22⅓ cents, and ended at 20 cents (against 14 to 15½ cents in 1918, and 12 to 13 cents in 1917). At that time, end of December, London's selling rates and the increasing demands from the Continent attracted the current of trade from the United States. This too in spite of the fact that the exchange on sight drafts on New York (issued in Port of Spain) had reached a premium of 25 per cent. This enabled producers to gather in a bonus in exchange of about 4 cents per lb. on the value of his exports; in plain English, this means that he received in Port of Spain 23 cents per lb., for cocoa selling in New York at 19½ cents a lb. . . . Planters are making hay whilst the sun shines and no one will grudge them this turn in fortune's wheel, although it is not desirable in the greater interest of Imperial trade that it should last very long. Meanwhile a contract has been made for the total crop in 1920 of one of the larger estates at about $23 per fanega (110 lb.)."

This is how the exchange is helping Trinidad when selling to New York. No wonder that the Island is not ready to send cocoa elsewhere even when the New York parity on paper appears to us to be no great catch. This is why, one can suppose, that we in Europe seem to be paying so high. With over 48 French francs equalling 1 pound sterling, or about $3.38 in New York, it is possibly not surprising that Havre is having to pay double last year's rates, in francs, for her cocoa, whilst in 1918 prices were 20 francs below those I am now quoting for 1919.

Havre's Stocks and Prices on January 31st.

	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará	9,162	290 to 300	8	150 to 155
Bahia	20,038	270 ,, 290	1,698	140 ,, 147
Venezuela ...	16,014	295 ,, 350	4,063	150 ,, 185
Trinidads ...	15,026	290 ,, 310	1,417	147 ,, 153
Grenada and O.W.I. ...	3,280	270 ,, 290	13	145 ,, 150
San Thomé ...	14,587	270 ,, 290	119	140 ,, 147
San Domingo	62	250 ,, 275	—	136 ,, 142
Haiti	11,636	220 ,, 290	61	134 ,, 140
Accra	55,474	240 ,, 260	10	132 ,, 135
Guayaquil ...	41,269	300 ,, 330	1,588	150 ,, 160
Other kinds ...	2,549	—	5	—
Totals	189,097 bags		8,982 bags	

Possibly producing centres have had no benefit out of these high prices in francs. Be that as it may, the cost to consumers in France hits them just as hard, whether anyone benefits or otherwise. In spite of this it may be noted that the present stock is less than half what it was at the end of September when the accumulations totalled 386,500 bags. Whatever may be said to the contrary, there is no doubt that the world as a whole wants a good deal more cocoa, not excepting Accras, than it seems likely to get. The news from New York, from Havre, Bordeaux, London or Liverpool are all the same. Messrs. W. R. Grace and Co., of New York, put the case very honestly when they said on January 20th that cable news contradict reports as to lower prices being the rule at producing centres. The American market is firm, due largely to a lack of offers. Further on I will give the latest news of that market if received.

London meanwhile also continues to be meagre about her stock. It seems as if she cannot pull it up. Manufacturers here as in America profess to be indifferent, but the hundred and one dealers, jobbers, &c., at all consuming centres seem far from indifferent for they are all quite keen on business, so that the manufacturers' attitude may be but a pose, a paying one no doubt, but still a pose.

Our stock on February 14th was as under:—

	1920 Bags	1919 Bags	1918 Bags	1917 Bags
Trinidads	21,578	19,881	13,686	17,666
Grenadas	12,966	10,975	11,167	13,330
Other W.I.	7,891	4,641	9,402	27,473
British African ...	16,326	36,617	77,501	34.028
Portuguese African ...	16,893	10,766	7,398	24.397
Cameroons	1,763	1,319	5,208	2,704
Ceylon and Java ...	9,181	11,808	28,269	24,896
Guayaquils	6,396	26,911	44,265	63,378
Bahia and Brazil ...	197	1,098	4,688	10,179
Other foreign ...	9,119	3,386	5,057	9,609
Totals ...	102,310	127,402	206,641	227,660

Figures of the arrivals of cocoa in New York vary a little but not enough to make you query any of them. You only wonder why there is any difference at all. This is what I mean:—

12 months—January-December.	1919 Bags	1918 Bags	1917 Bags
George C. Lee & Co. ...	2,655,402	2,233,754	2,490,237
W. R. Grace & Co. ...	2,789,309	—	—
Frank C. Alden ...	2,652,994	2,211,068	2,406,417

Here are the details, quoting Messrs. George C. Lee's figures:—

New York's Cocoa Movements—Landed Jan.-Dec.

	1919 Bags	1918 Bags	1917 Bags
All kinds	2,655,402	2,233,754	2,490,237
Including—			
Guayaquils	264,865	311,771	391,530
Trinidads	121,516	191,477	182,449
Hayti	31,120	24,901	20,151
Caracas	93,367	202,956	180,091
Bahia	557,185	440,614	596,513
Surinam	3,402	24,035	21,080
Sanchez	272,944	249,509	322,001
San Thomé	13,216	—	93,508
Other African	1,209,312	666,810	593,782
Delivered for Consumption—			
All kinds	2,570,382	2,122,505	2,276,111
Including—			
Guayaquils	317,784	300,569	348,808
Trinidads	117,092	154,017	174,905
Hayti	25,526	22,276	15,084
Caracas	130,242	171,472	136,303
Bahia	515,501	436,515	558,633
Surinam	7,042	24,612	16,799
Sanchez	229,158	245,894	328,136
San Thomé	8,113	3,957	87,809
After African	1,165,671	663,010	543,091

Stocks on Dec. 31st were 230,475 bags, against 346,362 in 1918, 323,148 in 1917, and 184,069 bags in 1916. The exports, from New York, last year amounted to 200,907 bags, including 37,843 Guayaquils, 16,968 Caracas, 46,580 Bahias, 35,555 other Africans, 17,944 Sanchez, and 13,957 bags of Java.

Bahia has quite a good idea as to values even compared with present high rates generally, but New York is finding them rather extreme. There seems a chance of more Guayaquils being on the move, or at any rate, it is reported from America that the Arriba market was showing signs of life towards the end of January as there were more offers moving. Machala Guayaquil is spoken of in London as being worth 170s.; one wonders therefore what fine Summer Arriba would be worth, were it offered. Of course quality in cocoa as in everything else nowadays goes for nothing; good to fine grades may or may not sell as high or higher than common grades. You must never be surprised at what happens. It is like the coal-heaver who draws twice and three times the pay of the ex-army officer who, if fortunate, receives 60s. a week for a temporary job found him by a grateful country proud of his work on the field of battle. Probably, now I come to think of it, this is why everyone runs after Accras, as ex-officers still want chocolates, and a salary 150 per cent. or more below that of a labourer or workman cannot of course rise to fine Ceylons or Central American beans in the chocolate.

Fortunately we still have the Profiteers and the Trade Unionist officials drawing £1,000 a year with us, and so Maracaibo cocoa for home use sold up to 230s. cwt., and bold Java at 201s. The other day the best Java sold at 211s. Now that Labour has left the Government, the price has dropped to 201s., which is a pity, not for these growths, but because I want to see more fine Ceylons over here. I suppose so long as America or American territory has got money to burn we must not expect to get our own choice Colonial cocoa on this side. Still there is that sale of Maracaibo—and I do not wonder at it since a Judge in Court commented on a man receiving 75s. a week for watching a hole in the pavement. Such a wage can afford fine chocolates to eat whilst doing such hard work, for chocolates are dirt cheap against 5s. lb. for ordinary cow's butter, and 8s for a lb. for *marron glacées*. One smiles over these little side-lines in a country's customers, but all the same they must affect markets a little.

Lisbon had a heavy month, especially for arrivals in January, so that her stock has jumped up considerably. No doubt the cocoa will be welcomed.

Lisbon Movements—January, 1920.

	Bags.
Stock on December 31st	139,652
Landed in January	153,603
Makes	293.255
Delivered in January	52,039
Leaves stock on January 31st, 1920	241,216
Against ,, ,, 1919	76,881

The Board of Trade figures for the whole of the U.K. have just appeared for January and show that no cocoa arrived here from Ecuador. Out of 8,994 tons landed, 7,223 were British West African, which does not leave much for other centres. The British West Indies were a poor second with 1,037 tons. Against these receipts we exported, in raw cocoa, 6,107 tons, and delivered for home consumption 5,762 tons, so that the total stock was lowered by nearly 3,000 tons according to these figures, but not according to the Board of Trade, which said we had 45,050 tons at the end of December. That figure must have since been amended since we are said to have only 40,950 tons now, as shown below, whereas 45,000 less 3,000 should have given a stock on January 31st of 42,000 tons.

Here are the movements for raw cocoa:—

		Landed Tons	Del'd H.C. Tons	Exported Tons	Stock Jan. 31. Tons
Jan.-Dec.	1918.	4,287	4,286	750	9,900
,, ,,	1919.	12,447	4,853	nil	30,700
,, ,,	1920.	8,994	5,762	6,107	40,950
		Decr. 3,453	Incr. 909	Incr. 6,107	Incr. 10,250

Bahia continues to produce and export substantial quantities. Messrs. F. Stevenson and Co. have just sent me the figures to the end of December which compare as follows:—

Bahia (City) Movements—

	Receipts 1919 Bags	Exports 1919 Bags	1918 Bags	1917 Bags
May-Nov.	456,468	514,601	420,192	424.981
December	80,405	63,565	49,604	120,845
Totals	536,873	578,166	469,796	545,826

I believe it will be found that the total exports from the Gold Coast during last year amounted to

175,000 tons, of which America took 75,000. If so, this would make the shipments for December only come to 17,000 tons; no wonder the price has run up, for those who talk in the street instead of looking up figures in their office (if the figures are there to refer to) have been placing their hope on shipments of 30,000 tons a month, and therefore have been disappointed.

Coming to prices generally, approximate rates work out as under, but in some cases, the quality mentioned, as with fine Trinidads, may not have been dealt in, or only to a very small extent, not sufficiently to make a market:—

Trinidads.—Fine marks 131s. and upwards. Good mid. to good red 128s. to 130s., mid.-red 124s. to 125s.

Grenadas.—Fine marks in good demand. Commoner grades, below 128s. are not easy to sell. One mark went at 131s. 6d., and others at 130s. and 131s. Good red 129s., low common to fair 114s. to 120s. Good fair 124s.

St. Lucia.—Sold up to 131s., other grades as with Grenadas.

Dominicas.—The best marks should touch 127s. and 128s., but it must be attractive and well prepared or else it will be passed over. Low common has been down to 105s.

Jamaicas.—Would do well for the best cocoa that island can ship here but does not. Its common grades, however, would not sell in a hurry just now.

Accra kinds are spoken of as selling at 108s. to 116s., other kinds at proportionate rates. The premium on parcels for export seems to have disappeared and the highest price spoken off (and not mentioned here) was for home use. The buyer told me the price which rather surprised me. He was quite right.

Cameroons are coming over in excellent order and even in appearance. Over 4,000 bags have just been sold with good competition at 115s. to 116s. 6d., the difference being rather due to competition to secure a share than to any marked difference in quality.

Java.—Sold well; fine bold 195s. to 201s., less bold 193s., lean, shelly, &c., 140s. to 150s.

St. Thomé.—Were at 105s. f.o.b. Lisbon, and then took a great jump in reported offers to 125s. or so. All the same 125s. remains the present idea of its value in London. It is difficult therefore to state exact value. The figures given a little way back of the requirements in New York show that America has not been buying this growth, so it must be finding its way, directly or indirectly, to the bottomless pit, sometimes known as Central Europe.

Guayaquils.—Are difficult to value. Fine Arriba is worth at least 5s. more than Machala and Caraquez. If therefore someone can accurately give me the price for the latter I can say the true value of Arriba, but it must be over 170s. in London.

Ceylon should sell at Java rates if a similar grade of cocoa were put up for sale. Boldish-medium has been sold at 180s. to 182s. 6d. There have been about 1,200 bags offered, but the quality was too low for buyers and so the cocoa was withdrawn.

Since writing the above, Trinidads have sold up to 138s., Grenadas to 134s., and Cameroons 120s., Accras (10,000 bags) to 117s. 6d. Nearly 20,000 bags in all were sold.

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Wanted—An International Association to Advance and Safeguard the Vegetable Oil and Palm Products Industry.

IT has been proposed that an Association be formed for the above objects. It is not to be carried on for the purposes of trade, but to safeguard and advance the interests of the trade generally in such manner as the members of the association shall think best. No details have been gone into at present, and whether the official headquarters will be in London, elsewhere in the U.K. or at some centre abroad has yet to be decided. We should, however, be glad to have our readers' opinion on this point. In any case London would be headquarters for the receipt, collection and distribution of news likely to be of interest to members who would, as time went on, decide what the nature of that news would be. It is suggested that at first the subscription be $10 American gold, or its equivalent in other currencies.

The publishers and proprietors of TROPICAL LIFE are willing to include a supplement, specially devoted to the interests of the International Association, as and when desired, whether monthly or otherwise, and then, on terms to be agreed, copies will be sent to all members.

We hope to hear from those, interested in vegetable oils, palm products, &c., whether the idea appeals to them and if so shall be glad if they will state in writing their willingness to become members and help the Association to be a benefit to the vegetable oil world generally, whether as producers, transporters, manufacturers, distributors or consumers.

An Agricultural College for the British West Indies.

THOSE who have secured a copy of the report of the Committee which was appointed in August last year to consider the advantages (there can be no disadvantage) or, to use the official term, the desirability of establishing a Tropical Agricultural College in the British West Indies, must be pleased with the perusal of it and feel determined at all costs to support the proposal or proposals made to bring about the establishment of this much needed institution as soon as possible.

Those possessing a copy of the *West India Committee Circular* for March 4th, should also carefully read their appropriate and well-worded leading article on the subject, in which attention is called to the summary of the report published on pp. 63-66. We like the wording of both, especially where on the first page (in the leading article) we are told: "In not

recognizing sooner that tropical agriculture is a science which requires as much attention in the laboratory and the class-room as it does on the plantation, we have lagged sadly behind other countries with large tropical possessions. The United States have their Tropical Colleges in Porto Rico and Hawaii,* and these places have reaped the full benefit of expert advice from these institutions with the result of increased fertility and an improvement in the quality and quantity of the crops grown."

Thanks also to their colleges, and better system of educating students for farm and plantation work especially in connection with pests, their parasites, remedial measures and possible extermination, young Americans have been able to secure good posts and acquire valuable information and experience in our colonies, which have thereby been lost, both the salaries and the experience, to our men and our Empire owing to our not having had the means or will to train such men ourselves. We say this without any jealousy or ill-will towards those Americans who have so willingly come to help us and so ably aided us to avoid serious trouble when we have condescended to follow their advice and instructions. Mr. O. W. Barrett, or Mr. J. B. Rorer, to mention but two names which occur to us as we write, will, we feel sure, free us from any such charge.

There is, however, one point to which neither our West Indian contemporary nor anyone else has hitherto called attention sufficiently prominently to please us, yet is the one which we consider to be *the* important point and the chief cause all along of our wishing to establish agricultural colleges in the British Tropics.

Up to now there has been no inducement for British parents, especially those south of the Tweed, to look to the tropics as offering an attractive and remunerative career for their sons and even in some cases, as scientific investigators, for their daughters. There have, however, been many reasons why these parents (except in the very few cases when they had personal experience of a particular colony or industry) should turn their backs on these sources of wealth and advise and train up their offspring to look any where for the means of earning their living but the tropics. As a result, Scotsmen have swarmed to the tropics both in connection with agricultural and the resultant commercial industries. We were lucky to have had such men, long may they continue to do their work and prosper at it in the future as they have done in the past. But the southern Englander has, on the whole, become more and more disinclined to go to the tropics and the loss through this unmitigated "slacking" has enabled other countries to draw much wealth from the tropics that should have come to us either by right of ownership or because it was our capital which had opened up the country and developed the industries, as in Latin America. We have in every case done the fighting, and done the financing when the risks were greater than the profits (think of the ups and downs of those grand old Anglo-South American merchant firms to realize, to the full, the risky part of the transactions), and the German mainly and other non-Britishers have, in far too many cases, gone in and reaped the permanent benefits and profits.

We feel safer now about having those two agricultural Colleges than we do about securing that radical change in our very un-Imperial system of education, especially around London, against which men who know, like Sir Harry Johnstone and others, have spoken so often and so strongly.

This being so we shall look forward to two great improvements in our methods and facilities for developing the very latent but very widespread resources of this Empire of ours, when we get the two colleges.

(1) Parents then will keep their faces and not their backs turned to the tropics and, by doing so, they will come to see, as we have always seen, that wide, glorious road that has all along led from the smallest school (*via* the secondary school, continuation school, perhaps technical college as at South Kensington or up at Glasgow), straight out to the tropics. Seeing this they will not only be willing but anxious to send their children along the road to the benefit of themselves and of the country to which they have the honour, and it is an honour, to belong.

(2) Arising out of this the parents and the offspring, especially now women have the vote, will rebel vigorously against the antiquated, blind-alley system of general education that exists in our Council schools. They will insist that if the limper ones, afraid of the overseas' world, are content to take what they can get in an office here, at a quarter the pay of a coal-heaver, and less than the man who sweeps the road, those with a backbone and a normal amount of ambition and pride of race, shall be given every inducement and chance to go to any and every part of the Empire to make good. The training to do this shall not as now, cost an unduly heavy sum for, if necessary, it must be augmented by taxes drawn from those who enjoy the sweets of civilized life of Old England, including those who are now bleeding us so freely in order that they can be paid beyond their commercial value, although they or their representatives in Parliament take little or no interest in the scientific (or any other method proposed) development of our resources overseas. Great reforms will have to be introduced before this country can settle down. A broader-minded, inter-Imperial system of education will have to be one of the first of these reforms. The atmosphere generated by the establishment of agricultural colleges in the British Tropics will go a long way to help towards this, and the report now published will go to help us get at least the one College.

Much thanks therefore to those whose labours have given us this report. Dr. Shipley of Cambridge, the Chairman, Sir David Prain of Kew, the Vice-Chairman, and the other members who included Sir Francis Watts, Sir Owen Philipps, Sir Norman Lamont, Dr. C. A. Barber, Sir Edward Davson, Mr. J. Moody Stuart (to whom, we believe, we owe the final fillip that caused the committee to be appointed) and last but not least, Mr. Algernon E. Aspinall, the Hon. Secretary of the Committee, who is now, like Sir Edward Davson, in the West Indies, where no doubt they will spread and help to complete the good work with which they were associated over here.

* Also the Philippines at Los Baños, and of course there are a good number dotted about India.

Profits in Coco-nuts and Copra—as Foreseen in 1917.

As stated elsewhere, the wonderful demand for our book, "A Practical Guide to Coconut Planting," by L. C. Brown and (the late) R. W. Munro, has caused us to arrange for a second edition, or rather impression, for since the book will be unaltered since those clamouring for copies refused to wait, the book is to be reprinted exactly as before. "Good," said one would-be buyer, "and who wants anything better?" As therefore this seems to be the wish of those who will have to pay for the book, we are willing and pleased to let them have their own way, and this being so, the book will appear as before and as soon as possible.

Looking through the reviews, especially those out East, we are surprised at the information they contain when grouped together. This is shown by the following out of many extracts that we have made.

De Indische Mercuur, of Holland, gives a long review of the book made up of an interesting account of the coconut and copra industry under the Netherlands' Flag. We are not, however, at home enough with the Dutch language to quote what is said. Our press cutting is dated February 2nd, 1917, p. 94, and those who want information about the industry on that date may be glad to have the notice translated.

The *Straits Echo* tells us with truth that, "as some may remember, there was a big slump in the 'Consols of the East' when the speculative possibilities of Hevea began to be recognized and for a period coconut cultivation went out of fashion. But the setback was only temporary, for agriculturists, tired of and perhaps a little disappointed with latex, turned once more to copra. During the last ten years the area under coconuts has gradually increased so that now in the F.M.S. alone some 200,000 acres are devoted to this industry. . . . The planter who follows the methods recommended (in Messrs. Brown and Munro's book)—methods which are not derived from any theoretical source, but are the results of practical knowledge and experience—would be extremely unfortunate if he does not succeed in making his plantation a paying proposition."

The foregoing confirms all that we have ever claimed about the advisability of having more than one basket for your eggs. Who, when rubber was booming, would have believed that the price of the, at that time ignored, copra would tower above £70 a ton, almost 9d. lb., when the best raw rubber was under 3s. lb. Every dog has its day, thank goodness, and so, although well-managed rubber estates still do very well, even at present prices, one is glad to see that the high price of copra has attracted general attention to the industry, an attention too, that will always stick to it, as has been the case with rubber since the boom. One day perhaps cotton production will find its H. K. Rutherford or R. W. Munro, some say he is there already in Professor Green out in Brazil. Whether this is so we cannot say, but when the British secure a genius for cotton planting as we have for other tropical and sub-tropical crops, then, but not until then, will prices become more reasonable to the retail buyer.

The *Malay Mail* said much the same thing when it told its readers that very few planters or commercial men would attempt to dispute the contention that the practical restriction of agriculture to the one form of culture—of rubber—is a great source of weakness, and that if Malaya is to continue its record of uninterrupted prosperity other forms of agriculture will have to be introduced and encouraged. When this question is discussed the industry which usually receives first attention is that of the growing of coconuts. This has always received the support of the F.M.S. Government, and in asking Messrs. R. W. Munro and L. C. Brown to publish a book on the subject, they are only following their previous policy. Their book, "A Practical Guide to Coconut Planting," is on new lines in that it does not deal with the question from the point of view of coconuts as a investment. The authors' object has been to make it more in the form of a planters' notebook, and as such there is little doubt that this work of two admitted authorities, abundantly and suitably illustrated, will form a most useful addition to the literature dealing with agriculture in Malaya.

This is what the *Malay Times* had to say. It will be noted that we are discussing the production of coconuts and copra, not booming our friends' book. If the prospects were so rosy in 1917, when war darkened the earth and control and freights reduced profits to a minimum, what will these same papers say of the future of coconut planting this season when the new book is ready.

"Coconut planting," says the *Malay Times*, "has been to a very large extent overshadowed by rubber planting and there can be no manner of question as to the attractiveness of the latter. Broadly speaking, a coconut tree takes twice as long to mature as a rubber tree, and hitherto the profit from the latter has been greater. At the same time we are inclined to agree with what was said by a very experienced planter: 'If I were a young man with capital at my command I would rather invest it in coconut planting than in rubber. In the course of a year a rubber tree yields from 2 to 10 lb. of latex, but if science can produce a cheaper substitute your tree is useless. Now the actual bulk produce of a coconut tree is enormously greater than of a rubber tree, and where you have a high average of actual bulk produce the risk of synthetic competition is reduced to the lowest possible minimum. One cannot imagine either a synthetic cabbage or a synthetic coconut being profitable." We do not agree with this line of argument. A rival is a rival—whether synthetic or natural—and we would claim, with all respect to the *Malay Times*, that natural rivals in trade to coconuts and cabbages are far more likely to knock the bottom out of present prices than any synthetic rubber is likely to ruin the natural rubber industry. Meanwhile all these coconuts, cabbages and real rubber, are far too likely to maintain their present ratio of prices to please the retail buyers over here who are not participators in the profits arising from their production.*

* "If I might hazard an opinion," said the Rt. Hon. Reginald McKenna, ex-Chancellor of the Exchequer, speaking as Chairman of the Midland Bank (London, Joint, City and Midland Bank, Ltd.), "it would be that prices will remain permanently on a far higher

"It is obvious at present," claims the *Singapore Free Press*, "that coconuts cannot return the share-purchaser 20, 50 or 80 per cent. after five years as rubber may do, yet their cultivation, if studied and managed with as much care as is and has been devoted to rubber, will form a very valuable source of revenue after six or seven years, and may, if trade conditions take a certain line, develop in value rapidly and to a high point. A veteran F.M.S. planter, recently retired, stated that in his opinion planters who were maintaining their coconuts areas would, in five years or so, find they had a valuable adjunct to the rest of their business, and there is every reason to think this is likely to prove perfectly correct."

With copra at its present price, over two years after the above was written, induces one to feel that all these optimistic predictions have been justified and verified.

All the same the *Pinang Gazette* is right to shake a warning finger at us over here as when it said: "The rise in price of the raw material owing to the recent impetus given to the industry has caused exaggerated notions of profits to be entertained by some people perhaps; but, as the authors of the book before us remark, 'It is undoubtedly the generally acknowledged security of the investment that constitutes its strongest recommendation.'"

The *Pinang Gazette* away back in 1917 foresaw, as the others did, the strong future that was to come and has come to the careful coconut planter, for it said: "Now and then disgruntled individuals have had an unfortunate experience in coconut ventures. This may be due to weird expectations and a combination of circumstances over which they certainly might have had control had the right lines been followed, and so they profess to regard coconut planting as not worth while. There could be no greater mistake. It is one of the best, safest and most remunerative investments which can be made."

In Bangkok, we are told by the *Bangkok Times*, the list of coconut planting companies has increased owing to people there taking an interest in planting ventures and mainly coconuts. There is the Rajah Hitam Company, followed by the Rajah Una Company, both choosing land on the Bernam river. Then there are the Bukit Tengah and the Packa Companies in the State of Trenggannu, and the Sipantas Company, also on the Bernam river but higher up than the Hitam or the Una. The authorized capital of these Bangkok companies is £168,000, but experience has proved that the amount required to bring these estates to the self-supporting stage has been underestimated.

"As far as drying copra goes," says the review on the book in the *Journal of the Fiji Planters' Association*, "a great deal may be learned from the book under review, and it appears to us that the low price generally realized for Fiji copra is mainly due to the usual unsatisfactory way of treating it. Some European growers on a large scale treat their copra properly and get better prices for it than those quoted in the newspapers, but the natives and a large number of small growers produce a very inferior article. Their reasoning may be easily understood. The copra is sold by weight; this is considerably reduced by drying, so the more moisture it contains, the heavier the weight and the more the money that it brings in. We have seen the Fijian pouring sea-water over the mouldy copra to get rid of the mould; it answers its purposes all right and the weight, including that of the water and salt, was quite satisfactory to the seller. The local storekeepers who generally purchase this class of copra of course refuse to take it, but in many cases they have advanced cash and given goods on credit, and so it often means either take the bad copra or get nothing."

Thus we see by the foregoing that out East they are more than busy working with the book as a guide. The West Indies, the United Fruit Company in Central America and the Americans in the Philippines hardly know the book by name. To the East its approaching appearance was known of months before it came out. In the West it came and went almost unknown, but when the second and third editions are out, then maybe the New World will welcome and discuss the book as freely as the Eastern papers have done and are doing still.

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level than in 1914. The rise that has taken place is not local. It is not even European and American. It covers the whole world. The cost of living in Japan has risen quite as much as in this country, where the increase is 125 per cent., say 225 against 100 in 1914. Increased production will bring down prices to a certain extent, but deflation is bound to come slowly. Any attempt to bring it about rapidly would cause widespread ruin to traders and manufacturers. The greatest caution will be necessary too in handling our financial machinery. Many of our pre-war ideas must be modified in view of the fundamental change in our conditions.

To complete the story, and as we have the Japanese figures by us (ex *The Journal* of the Japanese Chamber of Commerce, Yokohama) we will include them also.

Increases in cost of the following articles in Japan: –

	June, 1914	November 1919
Rice	100 ...	401
Barley	100 ...	307
Sugar	100 ...	220
Beef	100 ...	285
Grey shirtings	100 ...	513
Firewood	100 ...	310
Charcoal	100 ...	284

Coconut Chatter.

Coconuts, the *West India Committee Circular* told us a little time back, have not yet recovered in Tobago from the 1918-1919 dry spell, but the trees are laden in the windward district. Coconut cultivation is extending, and the natives are taking it up more keenly, one having recently added 200 acres to his estate. The island is to have the advantage of visits from Mr. Urich, the entomologist and mycologist of the Department of Agriculture, Trinidad, and Mr. Scheult, Superintendent of the River Estate. Mr. Alfred Miles, a cattle ranch owner from the Argentine, is now on a visit to relations at Merchiston Estate in this district. He is struck with the beauty of Tobago and its marvellous soil and growth, and is surprised that so little is being done by the people to utilize its resources.

Mr. James H. Lancaster, of the Lancaster Mechanical Products Inc. (50, Church Street, New York City), claims that with their coconut huskers,

nuts of all sizes, shapes and conditions (green, dry or semi-dried), can now be rapidly husked and the nuts separated and bagged on the one side, whilst the coir is conveyed elsewhere, compressed and baled for export. The husked nuts can even be counted whilst being bagged and automatically sewn when the sacks are filled. Faced as we are with a shortage of labour in all parts of the world and with great unreliability in such supplies as are forthcoming, these statements deserved attention because, if they are not over-optimistic, many centres will be glad to possess Lancaster machines.

In no industry does the unknown and the untried exist as with appliances that have been evolved, but not tried, at any rate not on a commercial scale, since 1914, for extracting the nuts, kernels, oil or fibre from coconuts and other oil-yielding seeds, and it will be both interesting and important to watch as the world, especially the vegetable-oil extracting world, settles down, what really useful machines and appliances have been brought into existence during the past five years.

The coconut manufacturing industry has become an immense concern in America. It would have been at least twice as large over here, but on account of the war its progress has been checked, but enough has been done to make Mr. Lancaster believe that he will save the time, money and labour of planters and oil-extracters if he is able to gain their confidence sufficiently to induce them to give his apparatus a trial. It has been claimed that over 200 vegetable-oil yielding seeds have been experimented with of late years, and that many of them have proved possible commercial successes. It can be understood, therefore, how varied the machinery must be that has to deal with them. The cohune is still leading many on to nowhere, so it remains to be seen who will pull it up short and fix its fate as an oil-producer by placing a real cracker on the market. The coco-babassu nut is being discussed on all sides and many predict a great future for it, providing the right machinery is forthcoming. Until, however, the new labour-saving appliances have been tried no one can say what they are worth. We should be glad, therefore, if our readers would get into touch with the Lancaster Eng. Corp. at 50, Church Street, New York City, U.S.A., and work with them to help prove the machines available a practical success and in any case to let us know results, so that even if they fail others can see what they can do.

Reports printed and verbal from those over here, and from those who have just come home, speak of the increasing importance of the attention that Sumatra planters especially are devoting to oil-palm cultivation. To such an extent has the industry grown, at least in people's minds, that already it is being prophesied Sumatra will rival West Africa as a producer of oil-palm products, as no doubt it will if the world lasts long enough. Hearing this, we turned up p. 7 in Messrs. Munro and Brown's book on "Coconuts," knowing that it had something to say of Sumatra and its lands, and found this—written probably in 1915 or 1916:—

"The available land on the east coast suitable for coconuts is unfortunately limited, and, moreover, the fact that the rich volcano soil inland, which would perhaps grow the finest coconuts in the East, is also best for a special class of tobacco."

How Coconuts Grow—on Nothing.

Writing from Niue Island, in the South Pacific, in October, 1919, Mr. A. Gilbert Godsmark, tells the following tale of the coconut industry out there, which we have much pleasure in reproducing as follows:—

"This island—in which I have now lived for nine years with the exception of a break of two years during the war—has an area of 100 square miles and a population of about 3,500. It is a high island, and consists of a central plateau about 200 ft. above sea-level, surrounded by a rim of a quarter to half a mile in width, which is about 80 ft. above sea-level—almost like a cup and saucer. The chief export is copra. The island is formed entirely of coral, and abounds in caves, and is very rough. There is very little soil, and it is impossible to use a plough. There are no streams or running water, and heavy rains leave pools for no longer than a few hours, as the fissures in the coral foundations soon drain away all surface water. The coconut trees are too high above sea-level to benefit by the percolation of sea-water. In spite of this the island is clothed with vegetation and coconuts thrive. The nuts are of an excellent quality, and the trees, if weeded, bear very well. As the N.Z. administration will not allow white traders or settlers to acquire freehold land—although the native population has decreased and large tracts of land are going untouched—the growing and planting is all in native hands. The trees are not only planted too close together, but the nuts are badly planted in the first place. We had a hurricane a few years ago which uprooted many trees, when I was interested to observe that some of them had been growing in mere pockets in the coral, the roots being matted together through their inability to spread, or else had penetrated the fissures in the coral rock. I have also seen trees growing and bearing which apparently seemed to be growing out of the coral, the soil being such a negligible quantity.

"The coconut flourishes here, bears well if tended with care, and the nuts are of good quality. The chief requirements in the way of manure can be supplied by wood ash and guano. A tree planted on the site of an old fowl house was very vigorous and bore nuts in less than five years, but eight years is nearer the average. If the N.Z. administration would only allow whites to acquire some of the land now in bush the island would then get a chance to develop an industry for which it is so well suited, and the natives would benefit, as they would then see the advantage of planting systematically, and if they can be made to realize this they would improve their own methods. There are no coconut diseases here, and the only noxious growth is the guava, which is hard to eradicate, as the roots spread for a long distance, and the least bit of root left in the ground grows and flourishes. Paspalum grass sown on one plot has been detrimental to the growth of the coconuts on that piece of land. Having read with interests your book, "Coconuts—Consols of the East," I thought these few notes about our isolated island might be of interest to you."

Cacao Planting Developments in Ilheos (Bahia).

A Chance for British Capital and Push—especially Push.

We have just had an interesting letter from a friend, a new subscriber in Ilheos, from which we take the following notes:—

"We are developing a large cacao estate out here. If our plans are successful the estate will be the largest one of its kind in this country. From the few thousand trees already producing we are receiving sufficient cacao to cause me to ask you about a small mechanical dryer with a capacity of five to ten bags (each 1¼ cwt.) per day, but it must be a reliable and practical machine. If the one I hope to put up should prove successful there are a number of planters around who should be requiring similar small machines, which should be so arranged as to be worked both by hand or by means of a gasoline engine. In recommending any particular type you must remember that this is a very rainy region. It is practically impossible to depend on sun-drying. The common practice is to erect some form of masonry stove with wooden or wire shelves. These are made on the estates themselves, but are dangerous with the class of labour that we have here. I have no personal knowledge of drying machines suitable for cacao, and would therefore very much appreciate any information from your side about them.

From all I have seen—and that is a good deal—it would surely be a good idea for the pushing but capable representative of an up-to-date house interested in cacao-estate appliances to visit Ilheos, and after travelling over the area and seeing exactly what was wanted, to design the machine or machines that the various owners so badly need. Having decided on this the firm can either establish branches over here, with headquarters in Ilheos, or combine with one of the leading cacao-merchant houses on this side to represent them. To be successful, however, a staff of mechanics must be available both to erect new machines and repair those already in use. Such centres should have complete machines a well as parts in stock so as to be able to despatch them at short notice. If such a plan were adopted, I believe hundreds of machines would be sold, for the cacao zone generally is developing rapidly as regards area and output but not as regards modern methods and efficient appliances. These, as a rule, are non-existent.

I say this because seventy-five per cent. of the work, or more perhaps, is being carried out along most primitive lines, this too in spite of the fact that this, the Ilheos district alone, will ultimately become one of the greatest cacao-producing areas in Latin America. To-day, so far as the number of trees and their age are concerned, the State of Bahia, as a whole, could easily produce 1,200,000 bags of cacao per year, and turn it out, as a rule, of the "superior" type. Primitive methods, however, produce but 800,000 bags with a big proportion of "fair," and then some of that can only be classified as "fair" out of courtesy.

The proposition should appeal to all you folks in England to an amazing degree. It should do so—but does not. You are all cold as stone over Bahia and her cacao. Why is this? To have friends you must make friends, be they social or business ones; has England ever done anything to make the Bahia cacao industry a friend? I am afraid not. Yet you could have it all in your hands, especially if you supported and developed that most excellent of small railways, the Ilheos line—between that port and Itabuna—so that it can arrange to transport the stuff both up-country and down to the port. From all I know of them, they will manage all right with a little help.

The great interest that Tropical Life has always taken in the cacao industry induces me to hope that you will be able to "enthuse" the people on your side over the prospects of substantial and profitable busines to be done with the cacao zone in Bahia. It is not a showy business but a very good one. In these days when, even in costumes or the lack of them, "showiness" is so much in evidence, Bahia I feel is taking a back seat. Well, if you allow her to continue to do so the loss will be yours, not ours.

Can you put me in touch with a young man who has had experience in cacao-planting, either in the West Indies or elsewhere, as I shall need such an assistant. I should also like to get into touch with someone possessing reliable information as to the production and consumption of cacao, at individual centres and throughout the world as a whole. I ask you to try and secure me these as I have read your articles and books with much interest and am now subscribing both to Tropical Life and the *Confectionery Journal* so as to have your cacao notes in both papers. Needless to say, I shall, at any time, be pleased to furnish you with figures to augment those you are already receiving. I wish you could arrange to have your cacao notes translated into Portuguese and sent over here for sale. I am sure they would be greatly appreciated.

The British West African Association was represented at the African Society's luncheon, which took place in February, by Captain H. O. Newland, Messrs. J. Durie Pattullo, Frederick Walker, and Vere Herbert Smith.

Mr. F. C. Owen, of Messrs. Pattullo, Forde and Co., 65, London Wall, London, E.C.2, has been appointed Secretary of the Association.

The following new members have joined the Association: Messrs. Delbanco and Co., Ltd.; The Tin Areas of Nigeria, Ltd.; Messrs. Theo. Vasmer and Co., Ltd.; Messrs. Dobree and Co., Ltd.; Messrs. Russell and Co., Ltd.; Messrs. Cox, McEwen and Co., Ltd.; and Messrs. Bailey and Son, Ltd.

Great Britain, claim the Anglo-Swiss Condensed Milk Co. in their latest advertisement, is the one civilized country in the world which have no legal standard as to what "condensed milk" means. Consequently, during the food scarcity when the maximum retail prices became (and, we believe, still are) the minimum, many inferior brands were sold at same price as the best.

Rubber Notes.

"The Rubber Age." An Addition to the Family.

A new baby has been born to the world of rubber, one that shows signs of being strong and vigorous given the proper care and attention without which no new-comer can flourish. It has been christened the *Rubber Age* and, judging from appearance, has the confidence and support of the trade. It will appear at the beginning of each month and the annual subscription is 14s. per annum, post free, and a little printed note under the Publisher's notices tells the readers that contributions and suggestions likely to be of interest to the trade will be welcomed and, if accepted, will be paid for on an agreed basis.

Mr. Raymond Radclyffe, the well-known writer on economics (and brother of Mr. Leslie Redclyffe, the very keen representative in London for Messrs. David Bridge and Co., Ltd.), contributes an article on "The Plantation Industry," and each month, he tells us, "I propose to deal with the reports of the rubber companies, to analyse their figures and give a candid opinion as to their future prospects and present market value."

Monthly articles, written by men of experience, will we hope be included later on, dealing with the manufactuing side, for this country badly needs a manufacturing section, not to give any trade secrets but to encourage a spirit for research between chemists and juniors in the factories and of emulation between all hands to co-operate one with the other to place the scientific and practical side of the English manufacturing industry on a par with or even above the level of all competitors. To help in such a work, to place on printed record the progress made and urge those concerned to further effort—this should be the object of a trade journal, and the rubber trade in the U.K. is no exception to the rule. A portion of the space can be and should be given up to discussing the producing side of the industry, but this must not dominate the journal. No paper can properly serve two masters, viz., the producer and the manufacturer and consumer. What this country needs is a rubber trade journal devoted mainly to the manufacturing side, but at the same time giving prices and production and news of raw rubber, from indigenous as well as plantation centres. Much as we want to see our plantation industry flourish and go ahead, manufacturers must have news of Amazonas and what it is doing. In the past we consider that this important matter has been insufficiently discussed. Even if a maker has never bought a ton of Hard Fine in his life, he should be aware of what is being produced and where the rubber is going.

I think everything to do with rubber has got "dry-rot" in its legs. Poor thing, it cannot help it; other industries may be as bad, but that does not affect this page, which has only to do with rubber. For one thing the shortage in cotton, especially the kind and quality suitable for rubber tyres, is proving a serious skid on the wheel of progress, and America especially, we are told, feels the shortage badly. In our Trade and Finance notes at the end we give the latest news of our market, quoting Messrs. Lloyd, Matheson and Carritt's reports. It is to be hoped that the Congress, as well as the Exhibition next June, will pump some life into the rubber trade over here, and make the demand for it as good in proportion to its supply as it is for cotton with its shortage. This is where the motor industry must come in and help with mass production until we have at least 3,000,000 cars and their 12,000,000 tyres on the streets. Better still 4,000,000, and that will be but one run-about to ten people, serious overcrowding that compared to now—but who will mind?

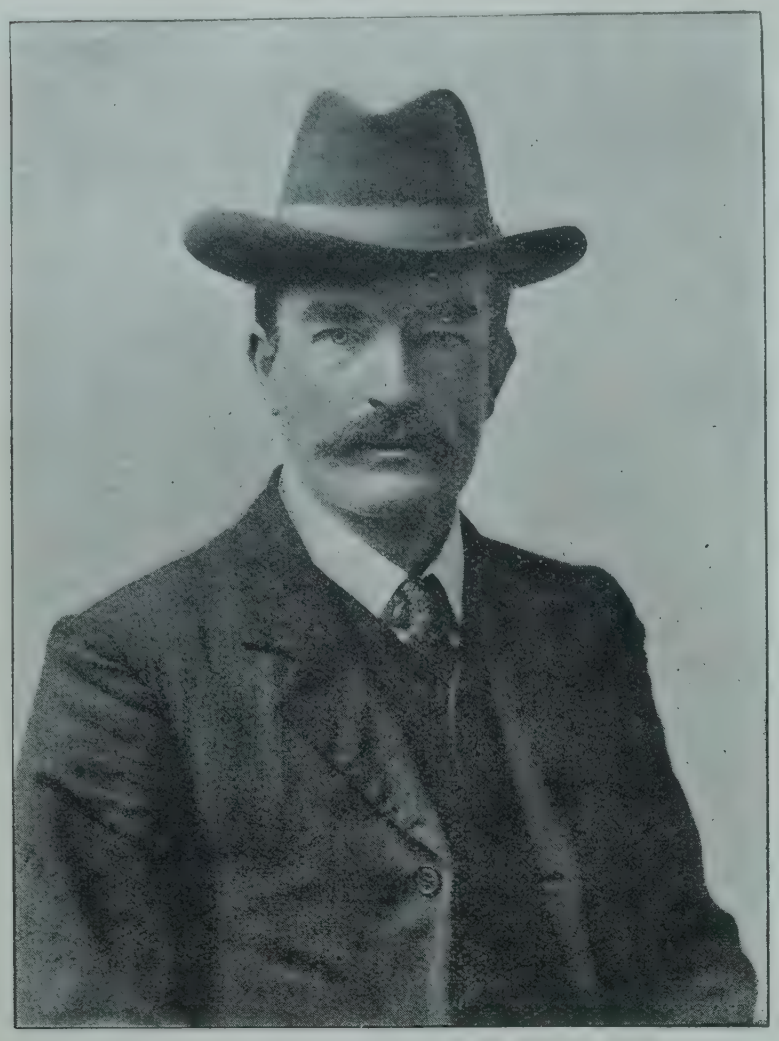
The Fifth International Rubber and Tropical Products Exhibition, now timed to take place in June, 1921, is going ahead. We recently met Miss Edith Browne, the Overseas delegate, and she has very kindly promised to send us particulars in time for our April issue. In view of the world-shortage of cotton and sugar, every endeavour will be made to place these sections on a prominent basis, whilst cacao, vegetable-oils and fibres will be important items—and rubber, *toujours le caoutchouc*—that is sure to be there from every portion of the tropics. The catalogue, from all accounts, as well as being a guide to the exhibits, will serve as a useful and lasting book of reference of tropical produce, its production, preparation and distribution.

If the information received from Honolulu is authentic, the *Indian Planters' Gazette* tells us, the new cure for leprosy will be of considerable interest to the medical faculty throughout the world. It is stated that complete cures of leprosy have been effected in Kalini Hospital, twenty patients being discharged during the past few months without one recurrence of the disease. The only medicine used in the treatment is chaulmoogra oil, perfected by a refining process which was discovered by Dr. Dean, Professor of Chemistry and President of the University of Hawaii. Blood tests of discharged patients revealed no trace of the leprosy germs.

The same Indian contemporary then goes on to report that "now the world is coming back to normal conditions, it is likely that the scheme, propounded as far back as 1913, for a College of Tropical Agriculture in Ceylon will soon take effect. A number of the foremost agriculturists in Europe are of the opinion that Ceylon is pre-eminently the best venue for a Tropical Agricultural College, and a world-wide interest in the subject has been created. It is suggested that the site of the college should be at Peradeniya, and if the committee's suggestions are carried out, Peradeniya will not only become much more important and useful, but its beauty will be enhanced and the place will be made additionally attractive to students of tropical agriculture and to the vast number of tourists that visit the island throughout the year."

Ceylon must not be too long making up her mind or the West Indies may be first in the field.

From Latin-America comes the news that Dr. Benito Sanchez, a Mexican physician, claims to have discovered a serum that cures typhus within forty-eight hours. It is to be hoped that both claims can be substantiated.



"Tropical Life" Friend.—No. 177.

Mr. Wm. Lees.

Managing Editor, "Australian Pastoralists' Gazette," "Queensland Country Life," &c., Brisbane, Australia.

Born in Birmingham and educated at the St. George School of that city, "Our Friend" reached the sugar district of Mackay, Queensland, with his parents when 16 years of age. Thirty-five years have passed since then, and during that time he has experienced the whole gamut of Colonial life. Sugar was booming in the coastal districts of Queensland in the 'eighties, prices were high, £45 per ton. On the other hand, labour was plentiful, and land was cheap, about 2s. 6d. to 20s. per acre for splendid, alluvial and scrub, i.e., jungle, lands. Enterprise was unfettered, and the hinterland of Maryborough, Bundaberg, Mackay, the Burdekin Delta, the Herbert River, Johnstone River, Cairns and Port Douglas were hives of industry. Sugar mills were either in course of construction or projected by the score and everything looked bright. Suddenly the blow came, really several, and within a year or two desolation was seen upon every side. Continued agitation had been at work for years to stop the only reliable labour at that time, the South Sea Islanders, or Kanakas, from coming to the Colony, and the Pacific Islanders Amendment Act of 1885 determined this at about the same time that the German beet-sugar came upon the European markets to stay, and in doing so to cause the price of sugar to fall to a little over £20, and later on even to £10 per ton. These two events, together with the fact that very large sums of money had been advanced to develop the Queensland sugar industry, caused a panic. Progressive work was stopped almost entirely and development work ceased, whilst the mills already established prepared to curtail work in every way. The loss to those who had placed their "all" in the venture was appalling, and among those who "walked out" was "Our Friend" and his people. Previous to this Mr. Lees had voyaged in a labour schooner to the New Hebrides and other islands recruiting Kanakas for the plantations, and the experience thus gained has caused him, even to-day, to become a first-hand authority upon the theory and practice of recruiting native labour. Cogently he puts the position before the authorities and the public. "If the white immigrants to Queensland had been as well looked after as the Kanakas, both in the recruiting and after landing in the Colony, there would have been few complaints." A Government official went with every boat to see that the terms of the Pacific Islanders Act were carried out. The vessels were clean and well-provisioned, and on arrival in port the recruits were carefully inspected and medically examined. Any rejects were returned to their island at the expense of the plantation. A Government official further examined them as to their ability to understand the terms of their indenture, which was three years and all found. There were special Government inspectors visiting the plantations at regular intervals. A special hospital and staff attended to any sickness, and the hours of labour were specially defined. On the expiring of their three years' service they were returned to their island at the cost of the plantation. Schools were provided, and they were always to be found a happy lot of boys. These are "Our Friend's" views.

Later on Mr. Lees journeyed to New Guinea, and then to the Croydon gold-field, a rich field situated about a hundred miles from the Gulf of Carpentaria. An adventurous journey was then made with a party across Australia to Hall's Creek gold-field in the north of West Australia. This proved, to use a modern military unofficial term, a "dud," and so some of the party went on to Cambridge Gulf and then crossed by cutter to Thursday Island. A journey up the Fly River, New Guinea, was followed by a "run in" to Brisbane and a series of trips to the South Seas, including Fiji, Samoa and New Caledonia, and some experience in a sugar plantation was sought and obtained during the process of establishing an estate upon the Roper River, Gulf of Carpentaria, which covered by the intervening time.

Many years ago "Our Friend" took up journalism, and in connection with *Commerce, Mining and Finance*, *Queensland Country Life* and the *Australian Pastoralists' Gazette* has travelled all over Australia and described, with ready pen, all phases of Australian life and settlement work. In addition to this a score of books are to his credit, all splendidly illustrated, as Mr. Lees is a good photographer and "some" artist, for who can pick out a beauty spot and snap it like him. If you doubt this, refer to the illustrations in "The Aboriginal Question," "Picturesque Queensland," "The Gold-fields of Queensland," "Around the Coasts of Australia and Fiji," "The Artesian Water Question," &c. We are not sure that all these "carry" photographs, but the bulk do, and extremely attractive ones too.

Business Notices.

1.—The address of Tropical Life is Messrs. Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.

2.—All **literary communications** should be addressed **to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

3.—All **business communications and payments,** either for subscriptions or advertisements, should be sent **to the Publishers** of Tropical Life. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

4.—The Subscription, which is **Ten Shillings** per annum, may commence at any time, and is payable in advance. Life Subscription, £5.

5.—The Advertisement Department is at 112, Fenchurch Street, E.C., where all inquiries respecting advertisements, charges, &c., should be addressed c/o the Manager of the Department. At the same time will advertisers kindly note that all copy and blocks for advertisements must be sent to 112, Fenchurch Street, E.C., before the thirteenth of each month, failing which, insertion of same in current month cannot be guaranteed.

6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Changes of address should be promptly notified.

8.—Non-receipt of copies of the Journal should be notified to the Publishers.

9.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

March, 1920.

Coffee Planting for Profit.—No. XXVI.

Seed Selection in Mysore.

(*Continued from December issue, p.* 190.)

We are glad to see that a reprint, in an attractive red cover, has been issued of what Mr. Rudolph D. Anstead, the Deputy Director of Agriculture, Madras, had to tell us in the July issue of the *Agricultural Journal for India*, Vol. XIV, Part IV, on "The Coffee-planting Industry in Southern India"; it is well worth keeping and those who did not see what he said in the original, will therefore be glad to have the reprint. It is issued by Thacker, Spink and Co., of Calcutta, without any price being mentioned.

The notes can well be divided into four parts, viz., (1) historical and descriptive (without any knowledge on the subject we were under the impression that coffee had been grown in India for longer than two centuries, but evidently this is not so.); (2) diseases and spraying; (3) seed selection and old-established estates; (4) modern coffee machinery. We like the concluding paragraph. We have always claimed that good coffee, i.e., better than São Paulo, pays to cultivate. Mr. Anstead confirms this. "There are," he claims, "a certain number of people who have never happened to visit a good coffee-growing district, yet who are apt to think that coffee-planting is a decadent industry, but this is by no means the case. It is a very flourishing concern and its outlook on the future is a bright one. The demand for high grade coffee in the European market is always likely to exist and it is for just these high grade marks which South India is able to produce and always has produced."

Speaking of old estates and the need of replacing the trees we are told (p. 583) that the coffee on many of the estates is very old. In some cases, individual trees must exist that are sixty to seventy years old, whilst on estates like Balmadies, in the Shevaroz Hills, some of the coffee is over ninety years old. The time is coming when this old coffee will have to be replaced. During the history of the coffee industry, one big change has already taken place, viz., when the old "Chick" coffee was replaced wholesale with the more vigorous and robust Coorg strain. There seems to have been little difficulty in making this change, but on the old estates now it is not easy to raise young plants or to grow supplies and the old coffee land is notoriously difficult to replant.

The history of the Coorg coffee is touched upon on the first page. Here are the details. "It is conjectured that, during the time of the Coorg Rajas, some Moplas introduced the shrub from seed which had been brought from 'Mocha' (an ambiguous term) or perhaps second-hand from Manjarabad. Its successful and profitable cultivation was at first concealed from the Coorgs, but these were shrewd enough to find out that there was a ready and lucrative sale for the produce."

The difficulty of replanting the old Mysore lands is due, according to Mr. Anstead, to a number of causes. One reason for recent failures being due to the strain of coffee now grown having been allowed to deteriorate. This is where the question of seed selection comes in. No care has been taken to select seed from which to raise nurseries, and one of the most important advances in recent years has been this realization of the need for better and more systematic seed selection.

Then the possibility of raising a new and more vigorous strain of coffee by means of hybridization along Mendelian lines, also struck the well-wishers of the industry. This important matter was dealt in at the time in an article published in the same issue of the Pusa journal. It had been taken up by a few of the more far-seeing planters and a hybrid has been evolved which has, it is claimed, all the vigour of the old Coorg, is highly disease-resistant, and which bears very heavily, much more heavily than the ordinary *Arabica* type, now cultivated on the estates in general. This new hybrid is now being grown on an estate scale and a great future for it is foretold.

Indeed, the notes go on to say, the future of coffee in Southern India undoubtedly lies in two main directions, first, the raising of good hybrid strains which will bear more heavily than the present coffee, and by the replacement of the old worn-out estates with these and, secondly, in the combination or co-

operation of coffee planters to control the local markets and prices and to develop and organize the local sales of Indian-grown coffee, as well as to do their own curing. Here we have good advice that can well be followed not only by coffee planters in India but by all planters anywhere.

When writing to send our good wishes to the Incorporated Society of Planters, recently formed in Malaya, we called their attention to the several occasions on which we have urged the need of better co-operation between planters both locally and even between different centres, so as to be prepared to fight similar combinations of buyers on the one hand, or to be able to supply them with those large parcels, even in quality and appearance, that are the order of the day, with all produce and all markets. So far as coffee in Mysore is concerned, these attempts to introduce a superior and reliable type of coffee, both as regards yields as well as quality, will tend to go a good way to help standardize the coffee of South India as a start. This, with concerted action on the part of producers, will do much good to coffee in Mysore.

(To be continued.)

Future Prospects in Brazil.

"What Brazil needs in order to develop the immense natural resources within her borders are foreign capital, technical training and, above all, foreign immigration,* It is a land of golden opportunity. With up-to-date sanitary habitations and modern hygiene, the valley of the Tocantins—to mention only one small section—could be made an earthly Paradise." Thus wrote a correspondent of the New York *Sun* last year, and he then went on to say:—

"Given the extraordinary fertility of the Amazon Valley, the variety of its natural resources, the excellence of the climate, the day cannot be far distant when civilization shall wrest from nature the riches which for so many centuries have lain dormant, untouched by man. The Amazon Valley is probably the richest undeveloped area in the world to-day; the region watered by the Tocantins and the Moju is but an insignificant corner of the Valley. The entire area watered by this amazing river is nearly 4,000,000 square miles in extent—larger than the United States, including Alaska!

"We were surprised to find coconuts growing on the banks of this river nearly 300 miles from the sea. We sent a young Indian boy up one of these trees and found the milk and the meat of these nuts to be of excellent quality.

"A small vegetable oil factory is being operated at Cameta which is manufacturing a high-grade lubricating oil, as well as illuminating and edible oils and soap. The nuts used are the uricury, mirity, babassu and others."

* Knowing this is why we give such prominence to these three sections in our "How to Pay for the War," and then explain, in the concluding portion dealing with Latin America, why we should concentrate all that is best in us in the way of knowledge and energy in helping the Latin Continent to develop and increase its incalculable riches and trade channels. Under the headings of Expansion, Finance and Education we feel sure that the correspondent of the New York *Sun*, and everyone else interested in increasing the material well-being of the Latin-Americans, will find all the information they need of how to make a start. As the book costs only 5s. 6d. post free, there is no excuse for anyone not having a copy to read and study.

Writing on this point of inland areas under coconuts, it will be remembered by those who have read Messrs. Munro and Brown's book, "A Practical Guide to Coconut Planting," of which a new edition or impression is being printed off, that the first paragraph is as follows:—

"*Indian Plantations.*—Where possible, we would much like to see the region of coconut culture extended in the inland districts, and as the difficulties of obtaining suitable land near the seashore are likely to become greater, it makes it all the more desirable. There is no doubt that inland soils, if properly treated, should afford any investor a handsome return, although he may undoubtedly have to wait some time longer for the first crop. The land should, of course, be well chosen with special regard to accessibility and easy and inexpensive transport. It has proved a fallacy to suppose that the salt water from the sea of itself has any influence worth talking about on the trees in its vicinity. The actual porosity of the soil is greater near the sea than inland. . . . Small plantations inland of which there are a great number situated on flat or slightly undulating land when in proximity to towns or villages have proved quite remunerative for the proprietor of moderate means. . . . We believe that the chemically richer soil inland should really conduce to the greater productivity of nuts, but it appears to us to be of special benefit to the tree to be exposed to wind and to intense illumination."

We are not at all attracted by the title, but in spite of that we hope that the new Java venture, *Holland's East India*, has come to stay and will be well supported and widely read by all interested in the Tropics. In these days of ever-changing exchanges it is difficult to say exactly in our currency what the subscription works out at. In the Dutch currency it is put at guilders 15 per annum, including postage abroad. The first article deals with agriculture, and pays a fitting tribute to the late Dr. Melchior Treub, and what Java and others owe to the educational and experimental work initiated by him in Java. Tables are given at the end showing the monthly imports and exports. Among these we notice that during the nine months, January-September, Java exported:—

Tons of 1,000 kilos.	1919	1918
Cacao	1,997	... 368
Sugar	1,335,161	... 945,559
Copra	58,436	... 2,972
Robusta Coffee ...	59,079	... 2,814
Coconut Oil ...	46,023	... 15,936 (1,000 litres)

Some of the delegates to the National Conference of the Amalgamated Society of Engineers, which took place over here on January 17th, are stated to have demanded a Soviet Government and the complete control of industry by the workers, and towards these ends they advocated reduced production and the hindrance of industry by every means.

Unfortunately the tale, according to these Soviet advocates, seems to have broken off short here. Given their way one wonders what these impractical fanatics expected would follow if they got what they wanted. So far as we know there are still only three ways to obtain their wherewithal to live: (1) By inheritance; (2) by earning the money honestly, and (3) by theft. Under which of these headings do those who are so busy advocating Soviet Government intend or hope to earn their living?

Meanwhile the following paragraph is but one of several that we have come across. We happen to have kept this one by us. It is a pity we have thrown the others away:—

Strenuous efforts, we were told at the time by the *Home and Colonial Mail*, are being made by representatives of United Kingdom makers of sugar machinery to capture the West Indian trade in this class of machinery, which was diverted to the United States during the war. The representative of a large Glasgow firm of machinery makers was recently in Jamaica, British Guiana, and elsewhere. Other firms are at present represented in South America, but as things tend to-day they cannot do it. One of our advertisers informs us that whereas, before the war, he could buy such machines to re-sell in India at £62 10s. each, from Motherwell, near Glasgow, the same manufacturers now ask £142. Of course the business is lost to England and goes to America.

If this is happening to-day, what will be the price when the new railway rates come into force and the moulders' increased pay, to say nothing of other strikes to come, to get all they so recklessly ask for, apparently quite indifferent of the harm they are doing to the country and the unfairness to the bulk of the British people who are not profiteers nor trade unionists?

We spent a very pleasant evening at the Savoy. Pleasant to the eye, peaceful to the mind and full of memories. We were watching Miss Constance Collier move across the stage—a du Maurier woman come to life in every detail—as Mary, Duchess of Towers, to the Peter Ibbetson of Mr. Basil Rathbone, and the Colonel Ibbetson of Mr. Gilbert Hare. It was very well done. The theatre itself is always full of memories to any old Savoyard, and then these characters of Du Maurier's, which were all well represented are so like the illustrations in the book and in the pages of our old friend *Punch*. How could it be anything but a pleasure to meet them, they are so very natural? Everyone should really go to see them if in London. Remember the recipe of how to dream true—"sleep with your feet crossed and your hands behind your head." We tried it, but in these days we are so jolly tired every time, that we never dream at all. Perhaps we do not think all the time—how can you when you sleep like a log? Peter Ibbetson managed it alright, however, and got forty years of pleasure and comfort out of it, so if you want to do the same, go to the Savoy and watch how he does it. If you wish to see the play at the Savoy as we did, you must go soon, as it will be moved elsewhere before Easter, and Easter is almost here.

Trade, Politics, and Finance.

Unlike a woman we will begin with a postscript, which, however, still contains the most important item of news. Tropical crops, rubber most of all, closely followed probably by vegetable-oils, will feel the effects of the political upset in Germany. Some claim that the real trouble has only started. No one doubts but that Germany will be as troublesome as possible and quarrel with everyone, including her own people, if they dare to oppose the party in power. This state of affairs is bound to affect their demand for raw material, and especially for expensive goods as motor-cars and so for raw rubber. Vegetable-oils that country must have, but who will pay for such supplies as they need? Pampered as they are being by all sides, and trusting that America's action over the Treaty may benefit Germany, it does not look as if the enemy of the whole world is likely to settle down and become a reasonable and useful member of society for some time. Until she does, however, any report as to the probable demand and range in the near future for tropical crops must be read subject to the state of affairs ruling in Germany. A disturbed militant Central Europe will check demand; a settled progressive Europe will increase orders tremendously.

It is pleasanter to pick up the paper nowadays and note how exchanges have been tending back in our favour either directly or indirectly; may nothing happen to divert this current whether the deal be with New York now up to $3.67\frac{1}{2}$, it even touched $3.72, or German marks which seemed to have touched (March 10th) 255, or the fall of the Shanghai tael to 7/10. As one of the papers remarked it is not much more than a month ago that the value of the sovereign in America was at its lowest, say 13s. 3d., whilst the sterling value of the dollar had, inversely, gone to 6s. 2d. against its old value of about 4s. $1\frac{1}{2}$d.

In spite of, perhaps encouraged by these exchange troubles and consequent high costs, industrial combinations grow apace. In such cases we would rather they did not assume the magnitude that some seem inclined to reach unless it will enable and even force the surplus men, who are too restless and too ambitious to become merely a part of a machine, to go abroad and help increase the wealth and swell the commerce of the country. Such men are invaluable; we never needed their assistance as we do now. Maybe, this will all go to help develop the Empire for, as more and more men get squeezed out as the combination steam-roller covers more ground, they should be able to find suitable and profitable berths abroad.

A branch of industry that could be and should be reorganized *ad extremis* is the motor industry. At present, although we hear rumours, we have noticed no useful signs of such combines. The business generally seems "swamped" with young men who would be far more usefully employed abroad than loafing about here, filling up the streets with cars that must be difficult to sell, or why do they need so many hangers on? Long lunches, "swanky" clothes and supercilious manners may amuse "the girls," but they are a "sure dud" when it comes to developing the resources of the Empire. If ever this country is

to compete successfully with America as a maker of cars and, what we want to see, as a consumer of rubber, we must get rid of this superfluous element and establish two or three concerns to turn out popular cars by the thousand whilst we still have that 33⅓ per cent. protective duty. When we do this we may become of some note in the world as a consumer of raw rubber, and in doing so be of much more use to our fellow-men in the tropics and to the working classes and the Exchequer at home.

As it is the consumption of raw rubber in this country even for the U.K. itself is nothing compared to what it should be. When you think of the few million people abroad under our flag, surely we should be able to give America points and still beat her, but there are no signs of that. If costs in England are too high, or if the industry wishes to remain exclusive, or is too mean to advertise as the Americans do, that is their look out, we still have other industrial centres nearer the rubber producing countries where surely popular cars could be produced and tyred to compete against even Ford of America. Is there no one in the Empire capable of organizing our motor industry and running it on those lines which seem to be proving so successful with cotton, vegetable-oils, &c.?

Coming to produce market news we are sorry to hear that a firm, Messrs. Scrutton, Sons and Co., whose steamers and (in the past) sailing ships have carried much produce from the West Indies and elsewhere to London and other consuming centres, is going out of business after having had an existence of some 120 years or so. Fortunately the two partners still enjoy good health and appear to have their full share of energy. This, coupled with a wonderful knowledge of the world's commerce and shipping, a knowledge which the possessors have often been good enough to place at our disposal, makes us glad to believe that Messrs. Frederick and Herbert Scrutton, even if they do retire, still have many years before them to help us all develop the industries of the Empire in the future as they have done in the past, for which we tender them our best thanks in every way. To the outer public there will, we understand, be no change. Every effort will be made to carry on a perfect continuity of present arrangements in every way. We wish their successors—Messrs. Thomas and James Harrison of Liverpool and London —every success. They know the trade routes over which the steamers will travel quite well. No one can quite take the place of Messrs. Scruttons in our conservative minds, but Messrs. Harrisons are, we feel sure, the next best to them.

Mothers of households do not seem pleased at some of the sugars meted out to them for household use. It is very clean and whitish, but has considerable moisture, judging by the way the particles stick together and to the spoon. "I do not know much about sugar," said one buyer who had been in the sugar producing tropics, "but if there is such a thing as No. 5 soft washed centrifugal, this is it, and all the sweetness has gone in the washing." Not being the Sugar Controller, we could not help nor offer an opinion, but the remark was worthy of note. It raised the query as to when can sugar be said to be adulterated?

In the free market, American granulated touched 120s. against 119s. for white Mozambique and Hong-Kong. If more than 120s. is obtainable elsewhere we suppose that this country will have to go without or raise its limits as, at present, no sugar must have more than 120s., duty paid, given for it.

We wish every success to a new venture, the Anglo-Baltic and Mediterranean Bank, Ltd., which has a capital to start with of rather over a million sterling. We say this because their policy seems likely to run very much on the lines of what we advocate in "How to Pay for the War" for financing those "out" to advance the trade and commercial prestige of the Empire.

The Anglo-Baltic and Mediterranean Bank, Ltd., we understand, has been established for the purpose of financing imports of approved raw materials, and providing that assistance to British manufacturers, merchants, exporters, contractors and shipowners, which will aid in the development of British trade at home and abroad. In order to attain these objects, wide and generous banking facilities—promptly available—must be provided, and this Institution is specially organized for this end, possesses a staff with the requisite technical knowledge, and will utilize a system designed and constructed for this particular purpose. *In financing imports of approved raw materials, it will be remembered that the security increases in value as the goods approach their market in this country, whilst on arrival they will be entirely under the bank's control.* Banking facilities in connection with export trade will be granted on the recommendation of highly experienced technical experts, whilst in providing for the needs of shipowners, credits will be arranged against the captain's signature and the security of the ship.

If this policy is acted upon, British trade interests within the area affected by the new bank should do well, and when the directors and others see how well, we hope they will extend such a policy to the tropics to help ambitious and experienced men in Latin America, the Pacific, and elsewhere.

With regard to ordinary market news, pigs' bristles continue to sell at astonishing rates. Superior, long white Calcutta's, 6¼ in. and above, realized 130s. per lb. (over 8s. an oz.), and 5 to 6¼ in. 77s. 6d. to 107s. 6d. Blacks went at 50s. for 6¼ in. and up, and 44s. to 48s. for 5½ to 6¼ in.

Rubber does not rise as we should like to see it do; on the contrary, it has gone back a little. One wonders why? A little further back we discuss one reason, but that is not sufficient in our minds. Since pigs' bristles sell so well, we cannot but feel that rubber should be doing much better. It stood at 2s. 7d. on March 4th for smoked sheet, then dropped to 2s. 6¾d., and on the 18th was at 2s. 4¼d., according to Messrs. Lloyd, Matheson and Carritt's table. Against this, Crêpe moved from 2s. 6¾d. to 2s. 6¼d., and then to 2s. 3¾d., whilst Fine Hard Pará was 2s. 6½d., 2s. 5½d., and 2s. 4½d. on the same dates. Soft Fine also stands at 2s. 4½d., and Caucho Ball 1s. 9½d. Balata, on the other hand, keeps firm. West Indian is 4s. 6d. to 4s. 7d., Venezuelan Block 3s. 7d. to 3s. 8d., Panama Block 2s. 11d. to 3s. 1d., and Tumaco about 3s. 3d.

The coffee receipts in Brazil to date amount to

5,625,000 bags, against 7,026,000 last crop, and 12,577,000 bags in 1917-18. East Indian and Costa Rican are said to have fetched extreme prices—fine bold Coorg, 191s.; peaberry, 199s.; colory, 180s.; Costa Rica, fine colory, 190s. 6d.; dull greenish, 179s.; good middling, 190s.—but other growths have not done so well, and Brazilian kinds seem rather to hang back at the moment. Cotton has been undecided and irregular, weather reports as well as trade troubles being the cause. Fully middling Americans stands at 26.80d., against 25.24d. for June, 23.52d. for September, and 22.04d. at the end of the year.

Manila hemp, grade J., is at £71 for spot, with £69 for near future delivery. Sisal is not quoted, except for oddments and for Government sales.

Copra continues to go back. It is now about £10 below the highest point reached. Fair merchantable sun-dried is quoted at £66 10s. to £67; Ceylon, £67 10s.; Malabar, £68. Marseilles speaks of £68 10s., but the Dutch ports are down to £66 10s., possibly on account of the strike. Fair merchantable Antwerp is put at £65 and sun-dried £66 10s.; Ceylon coconut oil has gone to £111 afloat; Malabar is not quoted. Shellac is about 780s. to 800s. for T.N. orange for spot, but runs below 600s. for August delivery. Copper has moved upwards, and is worth £106 10s. to £107 10s. Tin has also advanced, and is now worth £348 to £350 for Standard.

Foreign exchanges on the whole have moved more favourably for the United Kingdom, but one is sorry to see the franc go to over 50 to the £, whilst German marks have improved, though still liable to violent fluctuations. The New York exchange stands at $3.75 to $3.81. Gold is down to 108s. 4d. per oz., against 70⅝d. for silver.

The following is the usual comparison of the principal points in the returns of the Bank of England at the present time and in the corresponding week last year:—

March 20.	1920	1919
Bank Bullion ...	£118,270,077	£83,414,724
Reserve of Notes ...	34,938,100	28,289,300
Private Securities ...	91,954,013	80,844,932
Notes in Circulation ...	101,171,915	72,207,700
Rate of Discount ...	6 per cent.	5 per cent.
Price of 2½ % Consols...	48	57½
Price of Bar Silver ...	70⅝d.	47¾d.

The London Cocoa Market.

By the Editor.

It has been an eventful rather than an exciting month. No doubt the excitement is there but kept below the surface. Between London and Liverpool probably 30,000 bags have changed hands on private terms and the buyers would like as much again and more than that, but the cocoa is not there. What to do therefore—that is the rub?

Holland did its best to help. Labour over there loves this country so much, that the transport workers have struck and are giving such trouble, that the firm of Van Houten's is said to have closed down for a time as it is so difficult, almost impossible, to get reliable supplies. This caused five or six cargoes that should have gone to Holland to be sent here or elsewhere and so help to relieve the position whilst the Dutch owners did very well out of the deal. Supplies would have been still more restricted, at any rate in some markets, but for this.

Meanwhile as we stand to-day, or as we sat out the very long sales on March 9th, one cannot help feeling that we have come to a stage when, unless relief comes from somewhere, but where it can come from no one seems able to say, prices may take a big jump up regardless of the fact that we already stand at a higher range of prices than is conducive, under ordinary circumstances, to large consumption and a wide-spread and permanent demand. Such a state of affairs is, at first glance, an ideal one for the planters but it has its drawbacks. To begin with, no one can pretend that it is doing anything to increase the output either per tree or from newly planted areas. Secondly, one hears complaints (and the most outspoken one came from a producing centre, so far the chief offender), of slack or hurried work in the preparation even of the best marks, which lately have not been up to their standard. Buyers, therefore, of fine marks with years of reputation behind them for good quality are said to hardly recognize the brand and type in some parcels, and if this is not an exaggeration, I am sorry to hear of it. Of course the hurry may be excusable; it may even be necessary, to keep faith with the buyer and deliver in time, but also and in too many cases, I fear, it has not altogether been unassociated with the fact that present prices are high, and the cocoa is so badly needed, that the planters have not troubled about the good name of their marks. They have shortened the period of fermentation and hurried the drying so as to save time and money and get the cocoa away for sale as soon as possible. "Why trouble about the quality, it is sure to fetch over $20, and probably $24 in any case." Maybe this is a libellous fairy tale, but if it is not, the sooner it becomes but an historical myth, the better for everyone.

This regards the curing of beans. The London trade paper, the *Confectionery Journal*, published three interesting paragraphs on the menace to supplies through backward centres or careless planters neglecting pests on their lands. If a trade paper finds it necessary to call attention to what is going on at producing centres, the planters will surely be wise to take note of what has been said and see that it does not refer to them.

"On the same date," reported our contemporary, "that a *résumé* of the year's cocoa market for 1919 appeared in the *Economist*, a letter from the Editor of Tropical Life appeared in the Trade Supplement of the *Times* (in our last issue p. 28 Tropical Life called attention to both these contributions concerning raw cocoa in the London Press), warning the public against careless planting and pointing out what dire results have accrued in the past from inattention to pests and diseases. . . . When you come to think of it, all the big centres are badly affected. This is nothing new, only, knowing what is coming in the way of increased demand, wise men are trying to stem the evil. . . . Trinidad alone does not seem to alter. If the yield per tree in Trinidad was as good as that on the Gold Coast, three times her present

output would result, and that without another tree being planted."

With the present shortage and in spite of high prices and an assured demand for years to come (in comparison to the probable output) planters everywhere will have to take care, especially with the Gold Coast producing nearly 2,000,000 bags a year, because no centre can produce as cheaply as there and most centres will have trouble to produce at as low a range of costs as Bahia seems able to do. In face of this every estate must try and increase its yields per tree rather than per acre, for by so doing they can alone expect to pull down their costs since it is far cheaper to gather twelve bags from two acres instead of only six bags and some estates seem only able to get two bags to the acre, and then only bags of 150 lb. each = 1 lb. dried cocoa per tree, planted 12 × 12 ft., or 300 to the acre.

To do this may not be easy at first; pests and diseases, especially canker, must be got rid of. Sickly trees cannot be expected to increase their yields. Sickly trees therefore must go—the planter must decide how. Those elsewhere than in the Gold Coast, must remember that, providing the pests do not get the better of the planters, West Africa can cut out any centre so far as mere costs go, and therefore every pod less that *you* produce increases your cost and so puts you at a greater disadvantage still in comparison to your rival.

Ecuador perhaps knowing this, also possibly because the American element has become dominant there, has borrowed Mr. J. B. Rorer from the Trinidad Department of Agriculture, to investigate the pest that seems to be giving a good deal of trouble in that republic. Wise men, especially in Ilheos, are doing the same in Bahia where thrips and mosquilla are doing a lot of harm and will do much more if not checked. San Thomé has thrips or something, but is fully alive to the evil and means to keep it down. It is to be hoped therefore that the canker in Trinidad, an old-established trouble, will also be systematically pushed back until it reaches the sea and disappears for good.

San Thomé, by the way, in spite of its troubles, exported nearly 800,000 bags last year, say 420,921 bags to Lisbon and 354,900 sent direct to consuming centres. When one remembers all the drawbacks that this island suffers from in an unattractive climate, with its labour trouble and now with pests, and when one thinks what the Gold Coast has done with only native planters (but experienced white scientists, Mr. W. H. Johnson and Mr. A. E. Evans especially), it is a matter of regret that Trinidad, the mother of cocoa planting, has made but little or no progress. Look at her figures and say if they are not enough to make one weep, not with sorrow, but angry vexation, especially just now when the extra cocoa would be so very acceptable. The Trinidad crops, marked with a star, were record years at that time, whilst none of the San Thomé years have been specially picked out. This centre has all along given an even and slightly increasing output. If Trinidad produced as much per tree as San Thomé or the Gold Coast seems to be doing, she (i.e., Trinidad) would be putting out at least three times her present crop and that means a clear million bags. By the way, note that the Trinidad bags are worked out at 200 lb. to the bag against 60 kos., or 1¼ cwt., for San Thomé, Bahia or the Gold Coast. (This latter centre exported 243,000 tons during the two years 1918-1919—which at 16 bags, 1¼ cwt. to the ton, makes 3,888,000 bags or 1,944,000 bags for each year.) The comparison between Trinidad and San Thomé works out as follows:—

Jan.—Dec.	Trinidad Bags of 200lbs.	San Thome Bags of 60 Kos. or 1¼ cwt.
1900	149,508	220,149
1905	212,698	423,113
1910	290,090*	598,112
1914	321,032*	522,603
1917	348,736*	514,705
1919	303,716	775,842

Talking of that reminds me that the Bahia movements for the nine months May-January are returned by Messrs. F. Stevenson and Co. as follows:—

Bahia Movements—	Receipts Bags 1918	Exports Bags 1918	Receipts Bags 1919	Exports Bags 1919
May-Dec. ...	632,072	469,796	536,873	578,166
	1919	1919	1920	1920
January ...	52,062	111,045	56,449	41,311
Total ...	684,134	580,841	593,322	619,477

The Board of Trade figures for February are not as I like to see them so far as our deliveries for home consumption are concerned. I had better give the figures in full this time to show exactly how we stand. They also show how the two months compare:

Board of Trade Figures for Raw Cocoa.

	Imported Tons	Del'd. H.C. Tons	Export Tons	Stock Feb. 29 Tons
Feb. only, 1919	11,625	4,880	Nil.	36,800
,, ,, 1920	11,462	4,620	2,230	45,550
	Decr. 163	Decr. 260	Incr. 2,230	Incr. 8,750
Two months—				
Jan.-Feb., 1919	24,071	9,733	——	——
,, ,, 1920	20,456	10,382	8,338	
	Decr. 3,615	Incr. 649	Incr. 8,338	

Coming to more usual market gossip, I am saying as little as possible about prices and especially about prospects, but I again say that prices are already higher than I want them to be for any extended period, and that any important "spring-up" from the present level, through an incorrigible shortage, would do far more ultimate harm than immediate good. To-day prices are already remunerative and extra profits would not be as fully appreciated as the better and regular demand and prices latter on. Whatever value the French franc may be to the outer world to the French makers it is still a franc, and so when, as I am about to show, rates at Havre, quoting Mons. Anthime Alleaume's figures, have jumped up 90 to 120 francs since December 31st, that is, in only two months, the hardship to France is very great. I hope prices will not run up to the same extent in shillings over here. My planting friends may frown when

hey read this but I am sure it will be best in the nd if about the present level of prices can be maintained and not forced to follow the lead from Havre, where, by the way, exchange touched fcs. 57 o the £ and costs are so high that small makers are topping work.

Havre's Stocks and Prices on February 29th.

	1920 Bags	Value Fcs. Feb. 29, 1920	Dec. 31, 1919	1919 Bags	Value Fcs. Feb. 28, 1919
Pará	8,022	358 to 365	259 to 265	—	147 to 152
Bahia	22,300	325 ,, 355	235 ,, 255	1,226	135 ,, 145
Venezuela ...	17,501	335 ,, 450	260 ,, 300	3,830	150 ,, 185
Trinidads ...	13,657	330 ,, 350	255 ,, 265	3,771	144 ,, 152
Grenada and O.W.I. ...	2,380	315 ,, 350	245 ,, 265	—	142 ,, 150
San Thomé ...	16,907	320 ,, 350	235 ,, 240	4	140 ,, 145
San Domingo ...	164	315 ,, 330	215 ,, 230	—	130 ,, 140
Haiti	14,382	265 ,, 315	190 ,, 215	42	125 ,, 135
Accra	42,912	295 ,, 305	205 ,, 215	1	120 ,, 130
Guayaquil ...	40,715	370 ,, 400	266 ,, 280	1,576	145 ,, 155
Other kinds ...	3,254	—	—	2	—
Totals ...	182,194 bags			10,3452 bags	

	1920 Bags	1919 Bags	1918 Bags	1917 Bags
Trinidads	23,148	16,640	11,472	17,347
Grenadas	17,010	12,881	9,193	20,507
Other W.I.	8,954	6,746	9,061	30,933
British African ...	31,087	47,006	74,104	38,402
Portuguese African ...	15,368	10,314	5,223	27,468
Cameroons	1,378	476	5,074	5,114
Ceylon and Java ...	10,269	16,124	25,353	26,031
Guayaquils	19,593	34,892	45,830	65,880
Bahia and Brazil ...	132	1,056	4,672	9,659
Other foreign ...	10,587	2,987	4,273	10,648
Totals ...	137,526	149,122	194,255	251,989

Here is an optimistic note for planters to note and then take heed of. "Cocoa," the London *Confectionery Journal* tells its readers, "at last has come into its own. Its importance has been recognized, and this has placed it on a concrete pedestal from which, if ever it is dislodged, the fault will not be on the side of this attractive and useful food-stuff. It needed the war to put it there, for the public did not. Even after the South African War, when ruling heads and others, realizing the value of chocolate, sent thousands of pounds out to our troops as presents and tokens of our appreciation of their work at the seat of war, the public did not 'bite on' to its value, but it has done so to-day. The American trade press always said that the war would increase the demand for chocolate through their troops appreciating it when in the trenches. The Europeans have done the same. The war, and especially the modern system of trench warfare, has brought this about, and now *it only remains for the tropics to see to it that we are not stinted for supplies, and that those supplies are carefully and properly prepared.* (Italics ours, Ed., *T.L.*). We have the market—and a growing one, too—so they must set about to supply the raw material, also on a slightly increasing scale, so that our demand shall not be checked."

Of course, so far as prices go the export demand is as good, and even a shade better on the whole than the home orders, but one does not want to see the splendid increase in the demand within the United Kingdom and for English made confectionery and chocolate go back. There are, however, I fear, several reasons why this demand may be checked. The public, we are told, having had its fill of sweetmeats of all kinds after the long fast, are now quieting down. The high cost of sweets and the lower spending power of the best supporters of the trade, are also having an effect on the top of this, the strikes and troubles have even caused the working class profiteers to go slow for a time and spend less money in sweets than they would do were everyone in full work.

These details, which are important in the aggregate, are working against the increased consumption of raw cocoa in the United Kingdom for a time, however much goes for export. They also tend to counteract the tendency for prices to rise because they lessen the demand. In spite of reports that the confectionery and chocolate trade here is not handicapped for want of sugar (and of course it will not be so pinched for supplies if the public do not buy the manufactured article as they have been doing when first given a free market last year) there is no sign of the world output being increased just yet, at least for a year or two, and several reasons why it will not be increased to satisfy our requirements. The heavier cost of sugar—the controlled price to the British housewife is to be advanced twopence per lb., and perhaps more, if prices generally do not come down, and there is no sign of their doing so—may check the demand, especially as taxation, rents, and the cost of living generally go up as we settle down and realize that promises are but pie-crust, and that we seem likely to have to pay our own war costs, since no one will pay them for us. Many things, therefore, must be noted by producers if they want to do the right thing with their cocoa or sugar in six months, or in a year or two's time.

Letters from America speak of the slump in powder, both over there and in Europe, except in Germany. Their contracts for Accras seem to have been but partially carried out, and yet prices for this growth fell from 20 cents to below 18 cents, although, as one of the leading makers writes, Accras are known to have been heavily over-sold for December-February deliveries, and possibly even for later shipments. Contracts even have been sent back owing to the reduced outputs. Yet, whilst our market advanced, and still advances, prices in America, for Accra, fell away from over 20 cents to as low as 18 cents, some say they dropped to 17½ or 17¼ cents, but finally picked up again to 18 and 18¼ cents both for spot and to arrive.

"There are," my letter went on to say, "enormous quantities of powder on stock here, and we understand the same condition exists in Europe, with the possible exception of Germany, whose demand is problematical. It is even said their consumption has been limited. If so, is this to restrict the amount paid out for imported goods and food-stuffs?"

In America, which claims that it has considerable supplies—of what growths is not stated—of cocoa on the way, prices will be maintained, and may even be advanced, but it is anticipated that these larger supplies, when they do come, coupled with a tighter money market and the falling off in the demand for powder, ought to cause some dropping off in the competition, and hence the price for raw cocoa. Whether

it does do so remains to be seen. Prices from all one sees ought to come down, but that does not say that they will do so, and no one seems able to give you reliable information as to what is actually going on at the large producing centres. Any news that does come through must be at least a month old and is often contradictory in nature. Meanwhile we are unlikely in any case to have a dull time, and buyers may still be caught short before supplies come forward on a lastingly liberal scale.

Coming to prices in London, I would value as under on March 20th:—

Trinidads.—Superior marks have been sold up to 147s. Good to fine good red are worth 144s. to 146s. Good middling 142s. to 143s. Poor middling to middling 138s. to 141s.

Grenadas.—Top marks up to 139s.; fine marks, as a rule, 136s. to 137s. 6d.; fair to good fair, 130s. to 134s.; low common rules uncertain, but goes to 124s. for fairish reddish.

St. Lucias.—Good red marks sold up to 136s. 6d., and fine to 137s. 6d.; other qualities in proportion to Grenadas.

Dominicas sold up to 136s. 6d.; good reddish, 132s.; good fair, 128s. Lower grades in proportion.

St. Vincent.—Fine realized 136s. for a nice lot.

Cameroons have been selling high, on the basis of Accras. At the public sales on March 16th they sold with competition at 124s. to 130s. for good fermented to fine marks, common stuff at 115s. to 116s. The fair fermented did not sell. It is worth 118s. to 120s.

Java, if really fine in colour and break, is selling high. 100 bags realized 228s., but it was an exceptional sale, and 224s. or 225s. would have been the more usual price, against the 212s. 6d. paid for good boldish.

Guayaquils is a growth I can give no satisfactory news of. Nominal values still place Arriba at 180s. to 185s., and other kinds around 175s.

Bahia is valued as high as 140s. for superior, and "to arrive" probably would cost quite as much.

San Thomé is worth, in the same way, well over 130s. for fine, but the exact value is uncertain.

Accras and West Africans.—Prices on the whole remain unchanged. Perhaps there is slightly less demand for the moment for the best grades, and the bulk of the business spoken of seems to be around 125s. All the same, business has just been done at 122s. 6d. to 127s. 6d. according to quality, so one cannot claim lower prices; nor can they expect them from Accra until supplies are larger. Unfermented, against these rates, continued to be low, say 107s. 6d. to 110s. for f.a.q.

Ceylons would sell well if the fine qualities, which seem wanted so badly, were here. Good bold fetched 210s. and fair 198s. But the bulk of the offerings, and also of the Javas, failed to find buyers as the quality and colour were not up to the mark.

Havre had heavy deliveries during the first half of March. She received 16,687 bags, and delivered 40,797, leaving a stock on March 15th of 158,084 bags, against 182,200 on February 29th.

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A Monthly Journal devoted to the Interests of those living, trading, holding property, or otherwise interested in Tropical and Sub-Tropical Countries.

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The Proposed International Association to Advance and Safeguard the Vegetable Oil Industry.

COMMENTING on the suggestions made last month to found the above Association with a subscription of $10 American or its equivalent in other currencies, several letters have come to hand expressing approval of the idea. One of these was from Mr. Charles Downs, the Managing Director of Messrs. Rose, Downs and Thompson, Ltd., the well-known oil-machinery engineers of Hull, London, and Foochow Road, Shanghai, which ran as follows: "We notice a reference in your March issue to an International Association to advance and safeguard the Vegetable Oil and Palm Products Industry. We are inclined to think that such an Association might prove a great benefit to the industry if properly worked, and we should imagine that the official heaquarters should be in London, to begin with at any rate. We should be pleased ourselves to become members and help such an association by means of a subscription, and probably in other directions when we know more about its scope. Any further information that you can give us would be appreciated."

This is encouraging and we hope many letters of a similar nature will be received. As stated last month we expect to hear from those interested in vegetable oils, palm products, &c., whether the idea appeals to them and if so shall be glad if they will state in writing their willingness to become members and help the Association to be a benefit to the vegetable oil world generally, whether as producers, transporters, manufacturers, distributors or consumers.

The Coming Rubber and Tropical Exhibition and Congress.

To be held at The Royal Agricultural Hall, June 3rd to 17th, 1921.

EXCELLENT PROGRESS AND SUPPORT TO DATE.

Hon. Pres.: Sir Owen Philipps, G.C.M.G., M.P.
Hon. Vice-Pres.: Prof. Wyndham Dunstan, C.M.G., F.R.S., &c.

As stated as far back as last August and September (see our issues for those dates), many of those connected with the Rubber and Tropical Exhibition in pre-war days, under the direction of the late Mr. Staines Manders, are now arranging to beat the record with another one on similar but even more expansive

lines in June next year under the direction of Mr. Greville Montgomery, whose Building Exhibition is causing Olympia to be crowded, in spite of the distraction of politics and trade or the allurement to pleasure-seekers in other channels.

The *Rubber Age* (43, Essex Street, Strand) for April gives very full particulars. We have also recently seen Miss Edith A. Browne, the Overseas Delegate, and therefore in charge of the department that interests us the most. Reports from both sources, however, go to confirm our own views that for utility and educational interest the 1921 Rubber and Tropical Exhibition and Congress promises to be to ahead of its predecessors in several ways. The world has grown older and learned much since 1914, no one can quite gauge how much, but so far as tropical economics and developments are concerned we, personally, are looking to this Exhibition and Congress to show clearly both what profit has already been made and what we can look for, and how we can bring about further development in the future

All, or most of the producing centres we are interested in, have already promised to support the promoters. Brazil we anticipate will have much that is new to show us, so will our own colonies, including Egypt. We do hope that India will come in and make a big show, if only to enable us to realize what an important producing centre she already is, and even then what has already been done is nothing to what she could do if her potential wealth, in land, labour and capital, were utilized to the full. It has often been said that this country takes no interest in India; that an important debate in the House of Commons finds the benches empty. If this is true, may it not be to a considerable degree the fault of India? To have friends, you must make friends, and June, 1921, will offer India a unique chance of doing so. With sugar and cotton production, India could tower above all competitors. Whether she ever will depends on herself. Well arranged exhibits at the Agricultural Hall next year and papers read by practical men of experience, especially native-born Indians, will go a long way to bring India many new friends and these will come to stay. It is to be hoped therefore that India will loom as prominently in the coming Exhibition (and Congress) as Brazil and the Netherlands have always done. If these foreign countries find it an advantage why do not our own people do the same. On our back cover will be found further details, also a request that particulars as to what space is still available, cost, &c., will be supplied on application to Miss Edith A. Browne, 43, Essex St., Strand, W.C. 2, headquarters of the committee.

The High Price of Sugar.

Mr. C. L. Rayle, in Peru, Discusses Sugar Production in India.

We were pleased to see among our South American letters, one from Mr. C. L. Rayle, dated February 24th, written from "Haciendo Cartavio," Trujillo, Peru, in which country our correspondent has been for nearly nine years. Previous to this he spent a good time in the sugar refineries in this country and then went to India where he remained for thirteen years. During the whole of this period, twenty-five years or more, our correspondent has therefore been connected with the production and preparation of sugar for market. "Whilst in India," he writes, "I did a good deal of analytical work for Dr. Barber both at his Parlur and Samalhot farms, and I also made a tour of inspection through the Madras Presidency for Sir George Watt besides visiting, with Sir Arthur Chatterton, some of the irrigation stations. I have also been through the Central and the United Provinces, so should know the country pretty well."

Mr. Rayle had received his copy of Tropical Life for December and wrote in support of our contention that India could and should produce more sugar if not, as yet, for export, by all means to satisfy her own requirements. Whilst on this point we are glad to see, by the latest official returns, that a production of just over 3,000,000 tons of sugar, instead of 2,300,000 tons as was the case two crops ago, is expected this year as the total output from India.

In these days the strictest economy is needed to make any sugar proposition hold its own against other local crops as in India, or other producing centres as Cuba, &c. If therefore, as our Peruvian subscriber claims, concerns such as he first went out to, still exist, the sooner they are brought up to date and run to save time and labour (in handling the cane, and transporting the sugar) as well as money, the better for India. "I went out," writes Mr. Rayle, "to a new concern of which wonders were anticipated, only to find on my arrival that the factory was four miles from the railway and twice that distance from the nearest patch of cane and that but a small one, so that some 300 miles of hauling had to be done during a crop. The bulk of the cane travelled along a narrow guage railway and had to be transferred. Result—a failure and £175,000 to the bad. What else could be expected? At another factory it was found, when everything was complete, that they had no water for the factory. Others were encumbered with mortgages. I do not seem able to remember one place that made a clear start." [1]

In all these cases the causes of failure should not as a rule have existed. They have undoubtedly helped to give India a bad name as a sugar producing country. Refiners in Germany and elsewhere, even in this country, were only too anxious to make the most of such a reputation as they know, and we know, that once India's steps are turned in the right direction, she will do with sugar as she has done with jute and bags, produce such huge quantities at non-competitive rates of costs that all those now sending sugar to India will not only find this valuable connection lost, but would soon have to realise that India could cut them out even in their own home markets, unless a heavy protective tariff were raised to keep Indian sugar out. As we are quite indifferent as to what becomes of the export trade in sugar from Central Europe, and are most anxious, at a time like

* And yet our Editor was criticised for suggesting in his letter to the *Times* that when erecting a central factory it is as well to place it at the bottom of a slope since the loaded cars can travel more easily down an incline.

the present, when prices are so high, to see India's sugar-industry guided in the right direction so that she can compete with the German beet, we sincerely hope that the old methods, so wasteful of labour and time, will be abolished and instead of placing factories on a hill or far from the means of cheap transport, the authorities will make a point of seeing that these mulls of old (Mr. Rayle tells us that he has been in Peru for nearly nine years) are not repeated. Such failures in the past, far from being a discredit to India of to-day, can well be used to her great advantage since, with such a man as Mr. James McKenna in charge, we feel sure that they will be well known and never repeated.

"What I would like to see in India," concludes Mr. Rayle in one of his letters, "is a real sugar plantation similar to those which exist here in Peru, Cuba or Hawaii. They cannot hope to equal Peru perhaps, as it is one of the most favoured countries in the world but India could and should do as well as Cuba and similar places. If this is so, why should India be compelled to suffer because of the mulls of the past; why should she be deprived of the great wealth that would be hers, if her sugar industry was run with the will and determination to make good against all competitors and odds that the planters in the centres mentioned have shown. If these Latin republics have done so well, India could rival them with less strain if only because she has their experience to make use of.

"The apathy of the ryot may go a long way to keep India back, but was the same type of labourer in Cuba any more enterprising (except to riot and burn the cane)? It is the lack of enterprise, of determination and the absence of a constructive policy from above in the person of wealthy Indians or European officials, that has been India's "Old Man of the Sea." Why do not these millionaires, either alone or in conjunction with the Government experts, lead the way by financing a well arranged and carefully considered plan to lay out a plantation big enough, with or without the help of cane farmers, to keep going one of the 20,000 or 30,000 ton factories which we are told are the smallest size to be run with the greatest economy in costs. Such a factory must be located in tropical India, not in the northern part where the climate is against the growing of good cane. To save time, and make the most of present opportunities with prices well above the average of this, there is no occasion to take up valuable paddy land, as there is plenty of suitable areas lying idle which can be brought into cultivation, yet at present they are worth a comparatively low price per acre. The water supply, of course, would have to be assured and so, in some cases may be, the Government might have to be behind the scheme as the cost might frighten private capitalists, but whoever does the financing will reap the profits. If some such plan was adopted India would soon produce all the sugar needed for her own consumption and then, as you claim in your book,[1] would come forward as an exporter. The day she starts to do so, she will also start to dominate the sugar world. Naturally, therefore, the rest of the sugar world is not anxious to see India go ahead.

"I claim all that I have said, to be a fair review of the sugar industry in India to date and so feel that that country has never enjoyed the chance of having a well-considered and properly thought out attempt, on a national basis, offered to her as yet. Among the older factories I do not think that these is one which fulfils its rational and national level of duty as regards sugar production unless it is the one at Askar, but there may be, by now, some newer ones which enjoy the advantage of a better connection between the cane in the field, the machinery in the factory and the ultimate consumer at his table, but of such I cannot speak."

All those who have the prosperity of India at heart can but have thanks for so friendly if so critical a letter. In fair play to Mr. Rayle, we must add that whilst one portion of his letter was, undoubtedly, for publication, we are not so sure that all was. For the good of the cause, however, the cause of an adequate sugar supply produced within the Empire, we have taken the liberty of making use of the whole of Mr. Rayle's notes and even to include here and there what we seem to have read quite clearly between the lines.

---

[1] "The High Price of Sugar and How to Increase the Output in India and the West Indies." Tropical Life Publishing Department. 1s. 3d. net.

Those dealing in vegetable oils and soap-making refuse including glycerine, may be glad to take note of the following ex the *Cuba Review*:—

With the outbreak of the war the United States had naturally to seek other sources for a goodly part of such glycerine as it continued to import. Cuba had long been a shipper of glycerine to this country, and sent steadily increasing quantities each year from 1914 to 1918, but shipments declined somewhat in 1919, as the following figures show:—

Fiscal years ending June 30	Imported from Cuba lbs.
1914	222,183
1915	307,939
1916	316,990
1917	377,962
1918	428,495
1919	366,568
Average	336,690

Sir James Crichton-Browne, M.D., F.R.S., speaking at the twenty-third annual General Meeting of our old friends and supporters, Bovril Ltd., referred to the urgent necessity of preserving infant life to fill up the terrible gaps in the nation's ranks caused by war. It was not sufficiently realized, he said, that a good deal of infant life was sacrificed owing to the deficiency and inferior quality of mother's milk. He pointed out that Bovril contained, in high concentration, the constituents that promoted the secretion of good, rich, nourishing milk, and so should be a boon to babies who might otherwise perish. In face of these remarks, Bovril should go a good way in helping to nourish the mothers and also the children and thus to reduce the death-rate among children.

Rubber Notes.

Japanese emigration to South America may be, in fact should be, increased by the labour unrest in Japan. Whatever the cause of the unrest may be, the result will be the same, so do not let us discuss the causes but look for the effects. The shortage and high price of food undoubtedly has a finger in the pie. Well and good; send 20,000 of these (alleged) ground-down Japanese families (at five to the family would make 100,000 in all) and let them go up the Amazon to do as we have already suggested, plant rice, bananas and other crops. This will increase the world-supply to begin with, and also relieve the pressure on the local supplies in Japan, especially about Osaka, to go on with. Where we come in would be because such a movement would help to give Brazil the population she needs, and be a set off to the 30,000 Germans who are said to be ready to go to Mexico and make things hum there (when they arrive). Although, probably, 3,000 will be more than Mexico will see, there is no reason why Brazil should delay development work, when the one thing needed, increased population, is there for the asking.

Whether the Japanese will go is another thing. Hard things, on paper, are said of the Japanese Prime Minister Hara and the way he is turning towards the profiteering reactionaries of Japan instead of keeping with the socialistic radicals who hailed him as their hero when he replaced Terauchi. Who is right and who is wrong on this point, the fact seems unchallenged that the lot of the working classes, especially the factory hands in Japan, leaves much to be desired. No wonder the ranks of the *Geisha* girls are full to overflowing, harsh as that life is behind the scenes, when thirteen-year-old girls are still said to be kept at work for twelve hours a day or, when they are classed as women, they are herded with the men in stockades just as of yore. No wonder they have riots and strikes; no wonder so many are anxious to get away overseas. Since this is so, let South America facilitate their going. This is why Brazil should be on the look-out and arrange first to plant their settlers-to-be in neatly arranged little communities, and then send the invitation across for them to come. Those who claim that every Japanese emigrant in South America is but one of a thin line of communication with their Government need not fear, if the published accounts are but 25 per cent. true of any political intrigues in force, whilst the present clique; political and commercial, is in power in Tokyo. So long as the present strict censorship exists in Tokyo, those, like Australia, who always watch Japan, are unlikely to disbelieve those who claim that the present Nipponese rule is more reactionary than radical. Rubber men, hoping to see the Amazon region self-supporting as regards its food supplies, should watch the fortune of the Hara policy and politicians in Japan, and when the chance comes to benefit by its tendency to drive labour away.

Japan is one of the leading countries of the world to-day. The upheavals over there are quite on a parity with the troubles in Ireland, and ten times more important to the world at large. One is puzzled therefore why the press in England has so much to say about Ireland and nothing about Japan.

We wonder whether any of our readers will be inclined to confuse the baby of the London rubber trade journals, that has just made its appearance with its namesake, the *Rubber Age and Tire News* of New York. Of course there is more than one man named Smith in the world, and so there is no reason why there should not be a *Rubber Age* of London as well as one of New York. Practical experience, however, has taught us that two of a name can be strangely mixed up, and so we just warn our readers when referring to the *Rubber Age* to make sure which one they mean.

We are reminded of this because at the moment we are studying the articles in the New York *Age* on the cotton shortage and its effect on trade generally, and tyre firms in particular. The rubber journals on this side do not pay nearly enough attention to cotton, yet without its help where would any first-class tyre firm be? In Cleveland, U.S.A., the Mason Tire and Rubber Company is amalgamating with, or rather, is being absorbed by the Mason Cotton Fabrics Company, which rather looks as if, in this case, cotton was regarded as the "top-dog" of the two. Rubber manufacturing companies in the States seem asking for more capital on all sides; it is hoped that this country will take a similar spurt, as until we do we cannot be expected to rival America as consumers of raw rubber. We may have under fifty million people in the United Kingdom against over double that number in the U.S.A., but then what about the rest of the Empire? Are the folks there, no matter what their colour or creed, to have no motors or cycles, tyres or other rubber goods?

The *Bulletin de Caoutchoucs* (of the *Institut Colonial* of Marseilles) for 1920, No. 1, is given up to a Summary of the report published on the Dr. G. Van Pelt's mission to West Africa to investigate and report on the possibility of improving the quality of rubber exported from there. Those interested in our book on African rubbers, especialy Funtumia (by Dr. Cuthbert Christy, 13s. 6d. post free), will be glad to see what the second portion of the report has to say on Funtumia in the Ivory Coast, whilst the whole fifty-eight pages, which deals with the subject on up-to-date lines, from February to November, 1919, should be carefully studied and compared with what Dr. Christy had to say some years back. We have always felt that much more could be and should be made of equatorial Africa as a rubber producer. Such a report as that presented (in French) by Dr. Van Pelt should go a good way to help those who still believe in the ability of Africa as a rubber producer to go ahead. We congratulate the Colonial Institute at Marseilles on the report, and Dr. Van Pelt on the quickness with which it has been issued. Those wishing to have a copy must apply to the Institut Colonial, 5, Rue Noailles, Marseilles, for same. No price seems to be mentioned.

According to Mr. J. Marques, the leading rubber exporter at Pará, the 39,303 tons of 1,000 kilos of rubber that left the Amazon last year was made up as follows:—

		Fine	Others	Tons
Para	To Europe ...	3,334 ...	1,007 ...	21,040
,, ...	,, U.S.A. ...	8,831	7,863 ...	
Itacoatiara ...	To Europe ...	39½ ...	7½ ...	101
,, ...	,, U.S.A. ..	40 ...	14 ...	
Manaos ...	To Europe ...	345 ...	5,613½ ...	15,309½
,, ...	,, U.S.A. ...	419 ...	5,232 ...	
Iquitos ...	To Europe ..	302 ...	328 ...	2,852¾
,, ...	,, U.S.A. ...	1,079½ ...	1,143¼ ...	
	Total	...	...	39,303¼

Of the above, Mr. Marques headed the list of the Pará shippers with 3,410½ tons = 16·21 per cent. of the total exports, the second best, Messrs. Stowell and Co. exporting 3,351½ tons or 15·93 per cent.

The Rubber Market in London seems very glum. The rise in freight has not helped to improve matters in London, though it may help New York (at our expense) to buy more cheaply in Singapore. On the morning of April 15th London was not exactly what you would describe as being pleased with the world. "I came out to pick up good news," said one man, "and you all seem trying to make things as unpleasant as possible. The Bank Rate is up to 7 per cent., whilst rubber is down to 2d. or 2¼d. (2s. 2d. or 2s. 2¼d.), and the London market spoiled by the cream of the demand being detained out East, thanks to the outrageous increase in the Atlantic freight rate. Ah! well, I suppose it might have been worse; the Bank Rate could have been 8 per cent. instead of only 7." Here, in a nutshell, is a description of the London market at the moment.

Meanwhile Messrs. Lloyd, Matheson and Carritt tell us that the stock of rubber in London on April 3rd was 21,614 tons, against 14,618 last year, and 20,453 tons on March 27th (1920). Up at Liverpool there were only 110 tons of Pará. The *Planters' Chronicle* of Southern India speaks of our stock as possibly including the accumulations held for Russian account, but surely these have been sold. When the British motor industry has put on its seven-league boots, then we shall see some life in our rubber market. Surely the boots are somewhere around; but if so, they are taking a "dickens of a lot" of finding.

Now the Budget has been introduced. Whilst the new taxation will not affect raw rubber, it must affect rubber companies and estate owners very considerably. The papers of April 20th and the Finance Bills yet to be published should, therefore, be closely scrutinized to see how things go, and what changes in the method of taxing company's profits are contained in the Budget. Like the seven-league boots, the full importance of these changes will require careful searching out, but they are there, and if you fail to find them now they will prove to be in existence when the taxes are due.

On the morning after the introduction—by Mr. Austen Chamberlain—of the Budget the rubber market was dull and easier, but the undertone was quite firm. No. 1 crêpe had gone back, and was at 2s. 1¼d. to 2s. 1¾d. spot, rising to 2s. 4d. for forward delivery. Smoked sheet was at 2s. 1½d. to 2s. 1¾d., rising to 2s. 4¼d. October-December delivery. Against these, hard fine was 2s. 3½d., soft fine 2s. 5d. (but both around 2s. 3d. for June-July), and caucho ball 1s. 9d. per lb.

On April 10th the stock of plantation rubber in London was 20,972 tons, against 14,618 tons a year ago. Liverpool still had her 110 tons of Pará.

Commencing with Volume XVIII, No. 1, January-March, 1920, Mr. John Murray informs us that the price of the *Bulletin of the Imperial Institute* will be increased to 3s. 6d. net per issue, by post 3s. 9d. Annual subscription 14s., by post 15s.

The Fermentation of Cacao.

"La Revista de Agricultura" of San Domingo discusses the Subject.

Our Dominican contemporary, No. 10, of January 31st, 1920, includes a report of the conference held at San Francisco de Macoris, when Mr. F. O. Camps, head of the section dealing with cacao cultivation in the island, read a paper on "The Fermentation of Cacao," which *La Revista* has published (in Spanish) with several illustrations.

Having studied what Mr. Camps had to say (so far our slight knowledge of Spanish allowed) we sent the article to Mr. Knapp, who in returning same wrote:—

"Mr. Camps undoubtedly knows what he is talking about. He treats the subject in a very simple way, no doubt suited to the audience he addressed. This tends to show that the science and practice of fermentation has not, as yet, made much progress in San Domingo. At the same time, the statement made that the difference in price between well-prepared and badly prepared beans in San Domingo is as ten to seven is an interesting one. Surely if there is this difference the encouragement to prepare the beans carefully should be sufficient to prevent any inferior cocoa being sent to market. The statement made on p. 301, of which I send you a translation, has not, however, so far as I know, been mentioned by previous investigators. It claims that the vapour, if its escape is not easy, condenses, and the drops falling on to the beans oxidize the latter and adversely affects their fermentation."

Other paragraphs of interest include:—

The cocoa should be fermented for the following reasons:—

(1) That all small beans swell up and become uniform.

(2) That they acquire an excellent aroma, a nice colour, and can be kept from going bad for many years without losing weight.

(3) That the bean will go neither mouldy inside, nor flat nor become otherwise imperfect.

Some will think that they can get the same price for their cocoa, whether it is in good condition or not, but this is not so. If the price of cocoa is $10.00 and their cocoa is not in good condition, merchants can only pay them, say, $7.00, so that the fine is paid by the seller. (Against this must be set off the

loss in weight and time when the beans are fully fermented.—ED., T.L.).

The degree of heat during fermentation must fluctuate between 104° and 113° F. (Is not this rather low?—ED., T.L.). Yet this is not the surest way of finding out when the fermentation has reached the required stage. It is therefore wise to trust to one's experience to get satisfactory results, always taking into consideration the time (? weather) and conditions. Experience comes by taking daily or frequent observations. When the pulpy matter outside the beans goes a dark grey colour and becomes soft and doughy, the beans must be put into the dryer.

The Fermentation Box.—This must be so made and placed as to permit of the beans being put in on arrival from the plantation and of their being removed to the dryers after fermentation, no matter what weather prevails. Its capacity should correspond to that of the drying-trough or be larger if possible. The bottom must be made of stout boards, say two inches thick and six inches wide, with one-eighth inch intervals to allow the sappy, watery matter from the beans to escape.

The vapour, if its escape is not easy, condenses and the drops falling on to the beans oxidize the latter and adversely affect their fermentation.

AMONG the leading British firms enterprising enough to be represented at the first of the series of exhibitions organized by the British Chamber of Commerce of Sao Paulo and Southern Brazil, and held in Sao Paulo in January, were:—

Wm. Cooper and Nephews, Berkhampstead.
Messrs. D. Anderson and Son, Ltd., Belfast.
John Dewsbury and Sons, Walsall.
J. and D. Hamilton, Glasgow.
Kenricks (Brazil), Ltd., West Bromwich and Sao Paulo.
The London Aluminium Co., Ltd., Birmingham.
Paton, Calvert and Co., Ltd., Liverpool.
Henry Milward and Sons, Ltd., Redditch.
The Morgan Crucible Co., Ltd.
Negretti and Zambra, London.
Nuts and Bolts, Ltd., Darleston.
Overseas Exporters, Ltd., West Street, Sheffield.
Pilkington Bros., Ltd., St. Helens.
The Association of Portland Cement Manufacturers, Ltd., London.
Hans Reynold Ltd., Manchester.
Rubery Owen and Co., Ltd., Darleston.

The exhibition must have been a great success. No doubt the one for Fancy Goods to be held in June will do equally well. We certainly wish it and Mr. Lloyd Rolfe (Secretary, Sao Paulo Chamber of Commerce) every success on such efforts to push trade.

OSTRICHES, it is known, existed in Morocco since pre-historic times and then entirely disappeared. Recently, however, breeding experiments (with a view, we take it, of establishing ostrich farms as in South Africa) have proved very satisfactory at two places, Meknes and Marrakech, where they have been carried out.

The Dwarf Coconut in Malaya.

NEXT to rubber, coconut growing has become th principal agricultural industry in the Malay Peninsul we are told by the *Agricultural Bulletin* of the F.M.S September-October, 1919, vol. vii, No. 5, and wit an increasing demand for vegetable oils there reason for hoping that the industry may enjoy greate commercial prosperity than in the past. During th war, and especially in the closing years when shippin facilities were so restricted, the industry had som difficulty in marketing copra. Nevertheless, the ou put of the Federated Malay States has shown a stead increase, as is shown by the following statistics:—

	Export Tons	Value Sterling
1916	14,650 ...	£249,869
1917	20,807 ...	292,265
1918	25,190 ...	356,221

Experiments are being carried on by the Agricu tural Department to ascertain the best methods cultivation, the more prolific nut-bearers and the mos suitable soils; and a recent issue of the *Agricultur Bulletin*, F.M.S., contains an article by Mr. W. Handover on the Dwarf Coconut, known in Malay as *Nyor Gading*, or ivory coconut.

The dwarf coconut is remarkable for its early fruit ing palms, as is shown by the illustration, fig. facing p. 14, palms only ten feet high bearing abun dant fruit which even touches the ground. Grow under good conditions, it starts to flower in its thir year, and produces ripe fruit in about nine month from the appearance of the flower spike. The initia flower spikes contain only male flowers, but othe spikes occurring in rapid succession are larger an bear an increasing number of female flowers also. spike from a six-year-old tree, on being counted, wa found to have 200 young female flowers, whilst trusse of fruit from similar trees have been found with a many as fifty-five ripe nuts. There are several varie ties in colour. The dwarf yellow strain appears a the most prolific, whilst the other varieties vary pro portionately in their productiveness and also in th shape and size of the nut, and are evidently th outcome of cross fertilization from original types ' 'mutants.'' The '' meat '' is said by the Malays t be richer in oil and sweeter in taste than that of th big coconut, and it is, therefore, more popular wit them for domestic purposes.

In spite of diligent inquiry, Mr. Handover has no been able to find out the definite origin of this dwar nut, but it seems first to have occurred as a '' sport or '' mutant,'' probably in Java. Trees, thirty year old or so, occur in different parts of the Malay Penin sula, and many of these still bear abundantly. I 1912, 500 acres were planted with these dwarf nut at Sungei Nipah estate, on the coast between For Dickson and Sepang Point, and this is probably th only estate of dwarf coconuts in the world. The see nuts for this were obtained from trees then abou twelve years old grown by Malays on the '' Car dangs '' of the Krian rice district, in Perak, who ar reported to have got their original seed at a cost o $1 each from ships arriving at Penang, probably fro

Java. It appears that this dwarf form is practically unknown in Malabar, the Madras Presidency, or Ceylon, though isolated groups, as that of the "king coconuts" at Mount Lavinia (Ceylon) doubtless occur.

Like all coconuts, this dwarf form appears to be exceedingly hardy, growing well either in white clay, red loam or deep peat; in fact, it seems to thrive in any situation where water is abundant, yet not stagnant, though it is evident that well-drained alluvium suits it best. In such a soil six-year-old palms have been counted with 234 nuts (excluding ovules), and the trees average eighty nuts a year.

In the first year of production at Sungei Nipah, the crop over 225 acres was 102,000 nuts, whilst in the second year it was 574,000 nuts, and in the third year it will probably be very much more. From this, Mr. Handover considers an average yield from dwarf trees may be predicted as follows, taking the fourth year as being the first yielding year:—

	Per tree		Per tree
1st yielding year	... 10 nuts	4th yielding year	... 80 nuts
2nd ,,	... 30 ,,	5th ,,	... 100 ,,
3rd ,,	... 60 ,,	6th ,,	... 120 ,,

the trees being in full bearing in the latter or ninth year of their age, or the sixth year of bearing.

These estimates, in face of yields from individual trees, will appear conservative, but there are many points to be considered when dealing with average yields, and, no doubt, under ideal conditions a much higher average could be obtained.

In making copra, it has been found that the nut from a young tree is smaller than that coming later, and its kernel likewise thinner, whilst, of course, on heavy yielding trees the nuts are a little below the average size. But 500 nuts to a picul of copra is a general average, which would be decreased somewhat later on as more even nuts with thicker meat are obtained. With a leaf-length of only 12 ft., it was found convenient to plant the palms 24 ft. by 20 ft., which gave 90 to the acre, a number nearly double to that required when planting big palms. It is evident, therefore, that with this planting it should be possible to get 2,700 nuts, or $5\frac{3}{4}$ piculs of copra to the acre in the fifth year; and 10,800 nuts or 21 piculs per acre in the ninth year. This compares well with the 1,800 nuts or 8 piculs of copra in the ninth year from the big coconut. With the dwarf coconut there is the great advantage of easy and rapid picking and inspection for beetles and other pests; though, of course, in manufacture one has to handle almost two and a half times the number of nuts per picul of copra, but this is not of so great consequence when working with newly devised methods and machinery dealing with large quantities.

Mr. Handover concludes his interesting contribution with the following remarks: "The profit per acre from five-year-old dwarf coconuts to-day can even stand comparison with that of rubber, and the man who is planting to-day has to consider markets five years ahead, and might do worse than place confidence in the dwarf coconut."

We attach sufficient importance to the above and to other data that we have collected from the Philippines, from Ceylon, Madagascar, and other centres on the various kinds of dwarf palms to cause us to include same in an illustrated Appendix to the second edition of Mr. Munro Brown's book on the coconut now in the press.

"Engineering Notes" of the *Daily Telegraph a* little time back had an excellent article on "Sewage Disposal—Food Production and Research," which we read with interest. Among the processes it told us are some which may be carried out wherever it is most convenient without risk of nuisance, so as to avoid the long outfall sewer, with or without pumping plant, which would be required for a long distance site. One at least of the processes, but which one is not quite clear, also conserves the fixed nitrogen and grease, much of which is destroyed by bacterial treatment.

As long ago as 1908 the late Sir William Crookes called attention to the woeful waste of nitrogen in the form of sewage to an extent, some say, of as much as £20,000,000 per annum. What supplies of food could be raised with such supplies and that, too, surely without creating a nuisance? The question is one which affects all portions of the globe. The need of much larger food supplies and the disposal of sewage exists everywhere; one can but hope that everywhere the latter can be turned to use in helping to solve the trouble of inadequate food supplies, instead of merely being a nuisance and expense.

Of 2,315 rats examined last year for plague after being caught in the London docks, four were found to be infected. One wonders, therefore, what proportion of these infected vermin would be or are actually found at the various shipping centres, especially out East, if a count were taken. Even in London over 36,000 rats were destroyed at the docks or on board ship during 1919, and as during that period eight actual cases of plague and four suspected ones among seamen were reported, it is easy to realize how an epidemic might occur. The care taken to prevent such a disaster is so perfect (we could almost say unfortunately) that the public are unable to realize what risks are run when careless people are about, or what they owe to the authorities for keeping the plague fiend at a distance as they do.

Twenty years' work in Africa has clearly proved that, given methodical development, the French and British Sudan could furnish Europe with the greater part of the raw materials which at present it has to draw from America and pay heavily, very heavily, for; but transport facilities must be forthcoming. So say reports of Colonial J. Tilho's lecture, read before the Royal Geographical Society on January 19th. A political and economic scheme of co-operation between the English and the French will be necessary if this portion of Africa is to be developed as it could be and should be. "The pre-war policy," the lecturer pointed out, "of each for himself, must give place to a common effort for the well-being of the natives and the development of these immense territories."

"Tropical Life" Friend.—No. 178.

Mr. W. G. Freeman, B.Sc., F.L.S., A.R.C.Sc.
Director of Agriculture, Trinidad, B.W.I.

It was with great pleasure, as we believe we stated at the time, that we saw in the *Port-of-Spain Gazette* (Trinidad) of November 14th last that "Our Friend" for this month had been confirmed in the position of Director of Agriculture for that island. A better choice could not have been made, but then, on that very account, it sometimes seems as if, out of pure contrariness, such a candidate is passed over. Since this has not been so in this case, we hasten to congratulate Trinidad all the more heartily over its choice.

It is a good time since we stood up in the Council Chamber at Port-of-Spain. We are growing too old to say just how long, but it is not so far off as to cause us to be entirely out of touch with the bulk of the members. Not long ago we had the pleasure of lunching with Mr. Edgar Tripp, the ex-secretary of the Society, and other members whom we remember quite well, include Major R. Rust, Mr. E. A. Robinson, Mr. Radcliffe Clarke, and a round dozen of others. This being so, we can fully realize the appreciation expressed at that meeting, when the chairman (Rev. H. H. Morton, a pillar of strength in himself) and Mr. Tripp moved and seconded a resolution congratulating Mr. Freeman on his appointment, and at the same time conveying to him the Society's keen appreciation of the valuable work that he had done in the past, and (to put it briefly) the willing and interested way in which this work had always been done.

We say this because Mr. Freeman comes from a good stock and has had an excellent training for the work, also he is quite young for a Director in Trinidad, having been born on January 9th, 1874, the son of a B.Sc., Mr. G. A. Freeman. After passing through St. Olave's Grammar School, London, he entered the Royal College of Science, of which he became an Associate in 1895, after being its National Scholar for Biology in '92, and winning the Edward Forbes medal and Prize for the same subject in '95, the year that took us to Trinidad for the second time. Later, in '98, Mr. Freeman became a Bachelor of Science, being first in first-class honours in Botany, three years after he became—also in 1895—University Exhibitioner in the same subject at London University.

After this he betook himself to the tropics to become private assistant to Dr. Henry Triman, F.R.S., in Ceylon, at that time the Director over there. This was in 1896-97, after which the Royal College of Science lured him back to become her demonstrator in Botany from 1897-1900, after which—1900 to 1903—he was with Dr. (now Sir Daniel) Morris as scientific assistant at the Imperial Department of Agriculture, Barbados, when, among his other duties, he had charge of the *Agricultural News* and the *West Indian Bulletin*.

We next remember "Our Friend" as Superintendent of the Colonial Economic Collections at the Imperial Institute and as lecturer on tropical cultivation (Tropical African Service Course) under the Colonial Office. This was from 1903-1911, less a break in 1904, when Mr. Freeman was sent on some special service to S. Nigeria.

In 1911 "Our Friend," after the death of Mr. J. B. Carruthers, went out to Trinidad (where he has been ever since) as Assistant Director of Agriculture and Government Botanist. On the retirement of the Director, Professor Carmody, he became Acting Director until, as stated, he was appointed full Director last autumn.

Whilst in the island Mr. Freeman has been Vice-President of the Agricultural Society, President of the Royal Victoria Institute. In 1914 he founded the Horticultural Club, and was a member of the Commission to inquire into (1) the Deterioration of their Cacao and on (2) Education.

We hope to meet "Our Friend" this year to discuss the coming Rubber and Tropical Exhibition (June, 1921), as he took a prominent personal part in the last one (1914), when we believe that the exhibits he was interested in were awarded a gold medal.

The reading public on this side know Mr. Freeman best as author with Mr. Chandler of the "World's Commercial Products," which, with an average of more than one illustration to the page, is still one of the most useful books in our reference library. A co-editor of "Science Progress" (Murray), "Our Friend," with Sir Francis Watts, was responsible for a book (we have forgotten the exact title) on agricultural farming, also issued by the house of Murray. If we remember rightly, he also contributed sections on Cacao, Cotton, Coffee, and Tobacco to the last edition of the *Encyclopædia Britannica*.

Mrs. Freeman, also a botanist and an A.R.C.S., is responsible for some splendid water-colour drawings of various plants in the Botanic Garden.

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1.—The address of Tropical Life is Messrs. Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.

2.—**All literary communications should be addressed to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

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6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Changes of address should be promptly notified.

8.—Non-receipt of copies of the Journal should be notified to the Publishers.

9.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

April, 1920.

Review.

Brazil—Its Past, Present and Future,—perhaps best known as "Oakenfull's Brazil," for 1919, by J. C. Oakenfull. 814 pp. Freely illustrated, including many new photographs and maps. Price 15s. net. Weight, 20 oz. John Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, Oxford Street,, W. 1.

The best friends of Brazil must own that it is a country of terrible waste; the best soil lost to the land over immense tracts which ought to be planted instead of being washed away day after day out to the sea, and water power in quantities that are terrific, waiting to be harnessed and utilised to run factories at but a nominal cost. The more you believe in and are attracted to Brazil as a country the harsher the thoughts that rise in your mind on these two points. What opportunities to make good. What procrastination and delay in starting to do so. The water it may be, will always be there, but what of the soil, that most precious of all possessions; that which is of more value to Brazil than all the precious stones and mineral wealth taken from her soil since prehistoric times. Why do nations rave and rage over Brazilian diamonds and say nothing about her wonderful fertile soil? Fancy if it were diamonds from Diamantina, Goyaz, Bahia or Grao Mogul (Minas), or gold from the mines, that the Amazon, the Tocantins, the Paraguay or the Parana had been washing out of Brazil day by day, year by year, for these hundreds of years; what a tumult would have been raised over the alleged waste. What barrages, costing fabulous amounts, would have been thrown across the rivers to stem the floods, and yet—we would claim that Brazil may yet wish to have the soil back on her land whilst remaining entirely indifferent as to what becomes of her gold and gems.

Such thoughts have always been at the back of our mind when thinking of Brazil. They were so when we pleaded, in "The Rubber Industry of the Amazon," for an organized effort to be made from Belem to the Montaña of Peru to save that awful waste of soil, which all geologists know and every thinking man must realise, is washed out of Brazil and lost forever since it can never be regained. This is why we suggested in the book that efforts be made, where possible, to regulate the flow of the smaller rivers, putting drainage canals here to run off, or to help run off flood waters to the main stream, perhaps a comparatively small river, to the Amazon herself, and irrigation canals elsewhere be laid to conduct waters from where they are not wanted to those semi-arid districts where it is needed badly. If Mendoza in Argentina has been able to do so well with irrigation, one cannot help dreaming of Brazil being able to do the same. If one Republic can do it, why not another? Not everywhere, but here and there. It all helps, especially as a stimulating example for others to do as well and perhaps to go one better.

This was brought back to our mind by studying the latest edition of "Oakenfull's Brazil," for 1919, just to hand. It is a wonderful book, worthy of being classed with that astonishing catalogue issued by Mr. Staines Manders, for the 1914 Rubber Exhibition. It seems to have the same sized pages and thickness through. Like the rubber catalogue, it is crammed with information of every kind concerning the country of which it treats, and, among other things, it devotes much space to Brazil's wondrous, but relentlessly wasteful network of rivers.

Open your copy; if you have not ordered one take our advice and do so at once; and turning to p. 7 ponder over the soil that must be hurled every second over the Iguassú Falls, where, we are told, the stream "is 380 metres wide and the total fall of these cataracts is reckoned to be 300 feet." Here is but one of the many instances of where and how Brazil's agricultural life-blood is slowly and surely being lost to her forever. How long can this bloodletting continue, without harming the patient?

The next sentence in Mr. Oakenfull's book reminds us in a striking manner of the loss of h.p. that also flows to waste. Some 13 million cubic feet of water per minute goes over these same falls, and with it, the loss of some 24 million h.p. that could be and should be utilised by man in the diamond works, flour mills, abattoirs, tobacco and sugar factories, to say nothing of factories for other crops that probably

could be raised nearby. Soil and horse power right through the Republic therefore are being lost. It is well to remember this for there are those who claim that Brazil can do nothing for want of coal. Do the many mills and factories in Scandinavia, or along the Niagara, stand still for want of coal? Again we ask if they can be run with water-power, why cannot similar establishments be founded and made to flourish in Brazil, not only at Iguassú, but in hundreds of other places within the Republic. Take up your Oakenfull and study it, and you will see that what we claim, both as to the waste that runs out to sea and also as to the wealth that is there to be tapped, is not at all exaggerated.

The compilation of the mass of statistics and reports that go to build up this book must have been a heavy task, especially when everyone's mind and time was so completely absorbed in other matters in connection with the war and the nominal peace that followed that they gave the author little or no help. No wonder the author had to report that he had more grey hairs when he left off than when he started. The wonder was that he had any hair left to be grey, we feel sure that we should have been quite bald had we undertaken such a task during so trying a period. We heartily congratulate him on the results of his labours, for the book is a most useful and apparently reliable one.

In these days of food shortage, the area suitable for stock-raising and cereals (p. 23) in Campos Geraes is pleasant reading. According to Hartt, that part of the plateau in the Amazon Valley has the best climate in the world. In Campos Geraes at least 600,000 square miles of land are well suited for stock-raising and even for the raising of such crops as oats, barley and wheat and there are many such areas as these.

Since, we are told, the cost of collecting rubber is too costly to be remunerative, one wonders that the necessary reforms are so long delayed in connection with the river fisheries. The loss by explosives and poison must be very great, far in excess every time we should imagine of what the man or men need, who make use of these wasteful methods which destroy many fish whilst they take comparative few (p. 274).

Naturally we turned to the section on rubber (p. 307). It is a useful one which, without pretending to give full details regarding the Heveas, includes the names, with some particulars of the other rubber-yielding trees and plants. Quoting Martius, we are told that there are ten *Heveas*, and three *Micrandas*, a somewhat similar plant. Then comes the Castilloa, mainly *C. Ulei* and some six kinds of *Hancornia*. Some of the Heveas found in the islands of the delta, it is claimed, live to as much as one hundred years and take twenty to arrive at maturity. We are not told whether these yield rubber, either in commercial quantities or otherwise. "As soon as the cost of living is decreased . . ." of course everything will be alright for the Amazon. Who, however, is doing anything, even holding up one little finger to reduce the cost of living? No one, that we know of, but we do know that someone is holding-up the mission that should already be at Manaos or at Obidos, perhaps up the Rio Branco towards Guiana, to report on the country there to help develop the Amazon. A most reliable and experienced chief has been chosen, one well versed in rubber planting and the raising of crops in Ceylon and out East, as well as having been Director of the Gardens at Rio, and who enjoys a rare knowledge of the language, habits, and economic crops of Brazil. All this wonderful combination to help bring about success is being wasted. Like the soil and h.p. up the rivers it is running to waste in the sea, all because—of something or someone—somewhere. That is Brazil all over. The country is perfect. Where is the cause of this hitch in its development?

Until this mission and its English chief is allowed by Rio, or whoever is holding it up, to start, one cannot help feeling that the much talked of jealousy of the southern for the northern states is no myth. But even if it is true, surely with a Northern President a start could be made; if not, why not? Has Mr. J. A. Mendes from Para or Manaos arrived yet? He has been expected for some time. What will he have to say on the matter one wonders?

And some claim, when that mission, headed by Dr. J. C. Willis is sent up the Amazon to report on several things, all of which will not only materially reduce the cost of living but also help reduce the taxes on rubber (if the lines laid down in our "Rubber Industry" are discussed and to some degree followed) then and not until then, will things become better for rubber up the Amazon. Brazil may find fault with certain proposals in our book ,as we are told they have done, but they cannot put rubber on its legs, without adopting the general principle laid down, viz., of producing local food supplies and of planting crops and raising cattle to such an extent that the rubber industry will be but second or third fiddle and not the whole band, including the big drum, as at present.

We have carefully studied what Mr. Oakenfull has to tell us, and find that his views all tend to confirm what we have always claimed for Brazil, viz., that she only needs population and power to go ahead amazingly. Power, we claim, can be secured from her rivers, Mr. Oakenfull shows this time and again. Population is also obtainable if Brazil is wise enough to attract the modern Mongols to work near to, and perhaps intermix with the descendents of the same race that found their way to South America, via the Behring Straits or other route, some claim as far back as the later neolithic period. The type and disposition is still there, why not therefore encourage the Chinese to come. The day they do arrive in sufficient numbers to help Brazil make a start—the start that she needs, nothing can keep her back. But the start has to be made. We hope that "Oakenfull's Brazil in 1919" will have a big circulation, for there is much, very much, in it to help Brazil make that start.

Dr. Torrey will again be the chairman of the Rubber and Tropical Congress (to be held in London in June, 1921, in connection with the Exhibition), and has invited the Editor of Tropical Life to take charge of the British cacao-producing centres as one of two vice-chairmen.

Coffee Planting for Profit.—No. XXVII.

Variability and Poor Yields on Estates.

(*Continued from March issue, p.* 42.)

In an age when reliability of output ranks with standardization almost as tin gods to worship in the economic world, Mr. Rudolph Anstead's notes on variability in the yield of individual coffee bushes are certain to attract attention. Certainly they should do so.

The *Planters' Chronicle* had already discussed the notes made on the variability of the individual yield of rubber trees, and it now seems that Mr. Anstead has long been interested in coffee yields, and wished to carry out a series of investigations in connection with this crop, as had already been done with rubber. It seems that Mr. Anstead had often been struck how, on the best estates, even during good years, there were a good number of trees which did not bear satisfactory crops, whilst on poor estates, especially where the coffee is old, it would appear as if a large number of the bushes gave such poor yields that it would probably be better if they were removed and others put in their place.

As a coffee experiment station was recently established in Ceylon, it may be of use to our readers if we reproduce some of Mr. Anstead's notes. What we must omit, with regret, is the table of results, but it takes up more room than we can spare. Those, however, who want the article complete as published should write to the Deputy Director of Agriculture (Mr. Anstead), Mysore State, Bangalore, Southern India, and ask if he has a copy to spare of the issue, containing pp. 164-165 (we omitted to put down the date), in which his notes appeared.

As further results are promised, those dissatisfied with the returns on their own lands may be only too glad to know what Ceylon is doing to improve and equalize the yields, and in that case they will want to follow the useful work now being started from the commencement, of which we can give the following particulars:—

"It has always seemed to me that the go-ahead coffee planter might well learn a lesson from the rubber man who thins out," writes Mr. Anstead. "I have written a good deal from time to time about the rejuvenation of old coffee by thinning out and collar pruning, and the replacement of old trees by good hybrid stock (*vide Planters' Chronicle*, vol. XII, p. 34, and vol. XIII, p. 717). In dealing with this problem I am often asked, when should such rejuvenation begin; is it better to cut the whole of a bad patch down or only to collar prune bad bushes; is it better to collar prune or to replant? Before correct answers can be given to such questions a good deal more work must be done on the subject, and it is proposed to study it, among other things, on the Coffee Experiment Station just established.

"A start has been made, and this is to be looked upon as a preliminary note on the subject. It is hoped that it may be welcomed by coffee planters, as evidence that a beginning has at last been made with work on our long-looked-forward-to Experiment Station. The work will have to be repeated with the the same trees for several years, in order to be sure of our results and to discover whether a bad bush is always a bad bush, and, having ascertained this, it is proposed to try various methods of rejuvenation.

"With this preface, we will describe what has been done and give the results obtained so far, but, as stated above, this is only a preliminary note, or progress report. A small block of 110 trees in a patch of old coffee was chosen and the crop picked off each tree separately, the berries counted and weighed, and a record made of each individual tree. Three pickings were done, the first on December 22nd, 1919, the second on January 13th, 1920, and finally the bushes were stripped on January 27th. The individual yields of each tree were then totalled and recorded in a table (which we cannot include, Ed., T.L.).

"The total crop from the 110 trees was 29,755 berries, weighing 117 lb. 5·92 oz., with an average of 270 berries per tree. Two bushes had no berries at all, and several gave only a few. The highest yield was one of 1,752 berries, so that there was an enormous variation. If, now, we draw a line below those showing 201 to 300 berries, that is about the average, we can divide the trees into two main groups, those bearing below the average and those bearing above it. When we do this we find that 77 trees fall into the first group and 33 in the second. In other words, 77 trees out of 110 (70 per cent.) bear only 31 per cent. of the total crop, while the bulk of it, 31 per cent., was produced on 33 trees (30 per cent.).

"Now it is usually calculated that 140 berries per tree are equivalent to 1 cwt. of coffee per acre. On this basis we see that, in this block, 36 trees, or 32 per cent., are bearing under this rate. We are, therefore, faced with the same question as was asked about the rubber: Can we not distribute the soil, the moisture, and the plant food to better advantage, so as to take it from these poor trees and give it to the good ones? That is a question which remains to be answered. It would seem likely that some 70 per cent. of these trees should be replaced in some way by better bushes. This is, of course, a poor yielding bit of coffee altogether, but I think much the same results would be obtained on a great many estates if a similar investigation was made.

(*To be continued.*)

Trade, Politics, and Finance.

Of course there is only one thing to start these notes with, and that is the Budget. The Chancellor of the Exchequer has, we are glad to see, carried out the suggestion contained in our issue for August, 1919 (p. 132) and allowed incomes of £250 and under to be free of income tax. The cost of living and taxation generally has greatly increased since then, and so it was but just everyone should be served alike, instead of, as we suggested (not wishing to appear too greedy), that those who had served in the war, especially if wounded, should be free of income tax up to £250 and others up to £200. Now all are to be served alike, and so much the better, but—we hope this will not

induce slacking, i.e., men who might have gone abroad because they could do better there, may feel that now they can scrape along here and so not go. Still, as bachelors are only exempt up to £150 that will not be sufficient to detain them.

Our old friends, Messrs. James Livingston, Ltd., write telling us that as they need much more room than their old commodious offices allowed, they are now located at Imperial House, Kingsway, W.C.2, and will we ask our readers to address their letters to that building. Callers also might take note that the offices they occupy are Nos. 420-425. The firm has also opened a branch office at 8, Rue Nouvelle, Paris (E.9), which will be in charge of Mr. E. Paris, who has had unique experience in chemical plant equipment. Other continental and colonial branch offices will, we understand, be dotted about the world by Messrs. Livingston.

The world, i.e., our world of producers and shippers, seems very disgusted at the rise in freights, and one cannot help wondering how far this increase has already helped to bring about the slump in copra, rubber, cocoa, &c., at consuming centres in Europe, often in marked contrast to the firm tone and buoyant hopes that still exist at producing centres. London and the United Kingdom, it seems likely, stand to be specially hard hit, because America, Australia, and other purchasing centres can so easily go direct to primary or producing centres for what they need and leave London with its hungry shipowners alone. Because the Labour Party has run up costs to this country will not affect such buyers. Our freights, which were considered already unnecessarily high, seem to have gone up another 50 per cent., and that is all the world troubles about. The effect is what they notice; the cause is not their affair.

The output of sugar does not look promising, in spite (as with cotton) of all the talk about increasing supplies. We always have found that when there is so much talking there is never any progress, and generally a reduction in output. It is certainly so just now with sugar and cotton, and the consequence is, many industries directly or indirectly dependent on these crops as their raw material, are feeling the pinch badly, cocoa among them. What is worse still is the fact that probably the pinching will increase before a permanently normal state of affairs can be looked for. This is especially the case with Germany, the reports from which are as unreliable and contradictory in connection with the sugar output as they were during the war, and still are with respect to politics.

Talking of sugar reminds one of how much attention has been given in recent years to the question of manufacturing alcohol within the Empire for use as motor spirit. In the current number of the *Bulletin of the Imperial Institute* the possibility of utilizing the mowra flowers of India for the purpose is discussed. These flowers possess thick, juicy petals, rich in sugar. They are used by the natives as a food-stuff, and especially for the preparation by fermentation of an alcoholic liquor called daru or mohwa spirit. A single tree will yield as much as 200 to 300 lb. of flowers in a year. The tree also produces a valuable oil-seed, which is exported in fairly large quantities to Europe. During the war the flowers were used in India for the production of acetone, the yield being said to be ten times as much as that obtained by distilling wood, which is the usual source of this substance. The demand for acetone in India in peace times, however, is not great, and large quantities of the flowers would be available for the manufacture of alcohol, and would appear to be an exceptionally cheap source of this material, as the yield is high compared with that from potatoes and other materials commonly used, about 90 gallons of 95 per cent. alcohol being obtainable from one ton of dried flowers. It has been estimated that in the Hyderabad State alone there are already sufficient mowra trees for the production of about 700,000 gallons of proof spirit per annum, in addition to that necessary for the local liquor requirements.

It is suggested that the most profitable way of utilizing the flowers would probably be as a source of mixed motor spirit of the "natalite" type for use in India. That motor spirit can be produced on a manufacturing scale in India from mowra flowers has already been demonstrated, and it is stated that running trials with the spirit proved satisfactory.

Discussing produce markets generally as from reports issued to April 17th, sugar has been selling up to 114s. for White Mauritius, Java, Mozambique, &c., West Indian Crystallized at 80s. With coffee, fair colory Mysore sold at 148s. to 154s., middling 166s., fair bold 170s., bold Mysore 163s. Nairobi peaberry went at 176s. 6d., good bold 172s. The Brazilian receipts amount to 5,912,000 bags, against 7,657,000 last crop (out of 9,152,000, the total crop), and 13,174,000 in 1917-18, out of the full crop, 15,095,000 bags.

Cotton is quiet, fully middling American being 25.96d., against 25.18d. in August, and 23.32d. in December. Shellac is at 500s. for T.N. orange, and 560s. to 580s. for Garnet A.C., cakey to blocky 620s. if free. Rubber we discuss in Rubber Notes, p. 52.

Copra is dull and quiet, with several of the same complaints that trouble cocoa. The higher Atlantic freights do neither of these crops nor rubber any good, as they must tend to discourage demand. Present quotations for copra include Ceylon at £58, Malabar £58 10s., fair merchantable sun-dried £57, whilst Ceylon oil was down to £97, with a tendency of going to £95. Tin is worth about £343, copper £105 to £106. Manila hemp is worth £68, sisal £41.

The following is a comparison of the principal points in the returns of the Bank of England on April 17th compared with a year ago:—

March 17.	1920	1919
Bank Bullion ...	£112,449,590	£85,234,983
Reserve of Notes ...	24,416,420	26,030,935
Private Securities ...	79,891,326	78,304,624
Notes in Circulation ...	106,018,425	76,212,915
Rate of Discount ...	7 per cent.	5 per cent.
Price of 2½ % Consols...	46	55¾
Price of Bar Silver ...	67¾d.	48 15/16d.

Everyone will be looking up the papers of April 20th for full details of the Budget. No tropical produce, except spirits, will be affected, but more than that I have no room to say. What I would like my readers

to note, however, about the same date is the record notch to which the franc descended, nearly to 70 to the £ and the lira went to 107, that means to 3½d. and 2¼d., against 9½d., their value before the war. At the time of writing there had been a considerable improvement, but sellers to the Continent must watch exchanges most carefully, as further violent exchanges are sure to come, and those who do get caught get badly bitten at such times as these. The day after the Budget the franc has gone to 63 and the lira to 87, so much the better if this improvement will continue.

There is another side to this—supply and demand, orders and their execution, are as they are to-day; they could better, they could be worse, but—calculate in your minds and keep the calculation ready for when wanted, what the demand and consequent prices will be for tropical produce when things straighten out a bit. They will take time to do this, but out straight they will go sooner or later. The stormiest sea becomes calm in the end, no matter what mischief it did whilst infuriated, and so it will be with Europe. At present the burden must be intolerable. When coal (in Italy especially) is available and transport improves other things will be smoothed, and then, maybe, you will start to make use of those calculations and be glad they are there, so do not mislay them in the interval.

Meanwhile I am glad to see that the ever-watchful *Observer** is "out" against the present price of cotton. If only this Empire of ours could get a mover on its deep-stuck wheel of progress, 3s. per lb. for raw cotton or 120s. cwt. for sugar would not be in existence to help, with the adverse exchanges in Europe, to break the back of those who fought to make the world safe for Democracy and who have had to suffer for doing so . . . . outside America.

The London Cocoa Market.

By the Editor.

In theory this is a very nice world, with everyone at peace with each other and dying to make good the ravages of war whilst taking every precaution to prevent any other such war as we have passed through taking place in the future.

As a matter of hard dull fact, the world of course is nothing of the sort, it is, on the contrary, in much more of a muddle than it was in October, 1918. Then it had but one dominating object in the world, which is the happiest state possible to arrive at, now it has from fifty to five hundred important matters to settle before any one of the leading cocoa consuming centres can even start to settle down and go on trading as it did before the war, and as long as such a state of affairs exists no one can know what to expect, but rather be prepared for the totally unexpected to happen. They will, however, have to trade on a far more extensive basis, because of the leeway to be made up and of the increased population and higher wages of the masses, a portion of which in each case will go to increase the demand for cocoa and chocolate. But when that demand will be able to make itself felt no one can say.

This unsettled state of affairs everywhere directly interests every cocoa man, producer as well as trader and consumer, so that the present state of dry rot that seems to have eaten its way into the solid body of the world's Peace Council is extremely irksome to those who, knowing what a demand for cocoa lies tucked away in the great cities and centres of population everywhere, are disgusted and disappointed because they are unable to satisfy such wants, be they ever so anxious to be on the move to start doing so. The puzzle none seems able to solve is why such a deadlock exists. Perhaps if this could be answered progress would be made.

Universal education and unlimited pay for the crudest labourers has caused a class of politician and agitator to arise who, if they have done nothing else, have successfully eliminated and driven into political exile every man of genius in all the countries of the globe. When I say this, do not think that I am including the ex-Kaiser and his eldest son, or that I am anxious to see these two back in Berlin again. I refer to real statesmen and leaders of men, there seems none left. We have got those who sit on the shoulders of the masses and who move with them, to the left at one moment, to the right the next, now forward and then backwards; men, that is, who are being moved and swayed by the mob, and cannot and do not pretend to sway and lead the mob in any sense of the word. Until someone arises who can do so it is evident that things cannot settle down, and trade will not flow onward and outward as it must do if the cocoa (and every other) market is not to die of sheer inanition. And until that outflow of demand starts, the cocoa trade looks as if it will be held back like the rivers up the Amazon when the flood waters (like labour mobs in Europe) are running out to sea. Socialists claim that we are all equal. So we may be to them, and the consequence is that there is no one to give us a lead. Let us hope these universal providers of happiness and education are satisfied. As things are at the moment they are only blocking progress on all sides. Whether we are satisfied with the mulls being made is another thing, but no one seems to be so.

If the classes and intellects are all as one, except when the lower labourers demand the higher wages, exchanges in the various currencies of the world are certainly not at all equal. The German exchange has been so bad that now there is some improvement more satisfaction is being expressed over the mark being worth a penny instead of only two-thirds of one than is apparent over the franc not being nearly so bad as the mark. Francs, whatever they may have moved to when these notes are being read, stood at fcs. 63 to the £ (under fourpence), against eightpence last year. Whilst inquiries are about from Germany this seems to check business with France. Those

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* "As much," we were told on April 18th, "as £37,182,000 was paid c.i.f. for 254,000,000 lb. of raw cotton, or nearly 3s. lb. against 7¾d. in 1913:—

March	Imported lb.	Value c.i.f.	About per lb. s. d.
1913	130,600,000	4,207,000	0 7¾
1919	101,600,000	9,222,000	1 9
1920	254,000,000	37,182,000	2 11

having money to send from Paris and throughout France find it hard lines to remit whilst exchange is so much against them.

All these impediments to regular trading have to be overcome or "engineered" if transactions are to take place, and when it is impossible to do one or the other business is pulled up short, as is the case now. It has had several such checks lately, until one is inclined to lose their sense of locality and forget what transactions have taken place, for which market, and at what price. All the same this will not do; a change must come soon it is to be hoped.

Meanwhile I am sorry to see that whilst India is credited with a clear three-million-ton sugar crop this year, less than 4,000,000 tons are looked for from Cuba, and crops in Germany and elsewhere are so behind that the world's estimated output of sugar during the 1920-1921 campaign seems likely to be behind last year's, bad as that was when compared with the output in 1918-1919. What specially interests sellers of raw cocoa in this is the fact that Germany proper, whilst being in normal times a great buyer of cocoa, has only 750,000 tons of sugar put against her (by Messrs. Willett and Gray) as her present crop, against double that quantity in either of the two previous ones. This being so, how can Germany hope to do much with chocolate-making? The worst part of all this is that there is no signs of any improvement. No one pretends to place any real trust in reports from the continent of any nature whatever. How can you, when you read of the brutalities and the insolence of the "beaten and utterly crushed Germans," who alone seem to have any "go" and spirit in them? Someone must be prevaricating, but which side it is who can say; all the man in the street can say is that no progress seems to be made in any way, and especially with regard to increasing the area under beet, and that means very little progress in chocolate-making compared with what we want to see in sight.

The strike still continues in Holland so the demand there is held back. Thus let the planter and the shippers abroad sit up and take stock of each country. Vienna, Italy (with 100 lire to the £), Germany, France, Holland, Switzerland, Scandinavia, America and ourselves. None of us consuming centres seem able, or if able, to be willing to buy, and yet in spite of this, every producing or primary market seems firm in its idea of values and quotes prices often (as with San Thomês and their value in London) a long way ahead of buyers' ideas. How can such things be explained? Not at all easily and I for one will not try to do so. In some cases exchange undoubtedly helps, as with Trinidads when sold to New York. But this cannot always be the case.

Perhaps the producers and those exporting the cocoa to every market of the world, see more of what is going on on all sides than anyone of us, at but one centre, can claim to do. If this is so, far from being despondent or becoming anxious with the dull period through which we are passing, the planters may be saying "Good as prices are to day, what will they be when Europe settles down and more sugar is about? They must be much better than at present, satisfactory as they already are and, since this is so, why sell 'weak' when by holding back you will have all the more cocoa ready for Europe when Europe is ready to take the cocoa."

This may or may not be the case; only the fact remains that at present all the markets are running sluggishly, and since this is so it is unlikely that prices will go lower when the stream of demand, fed by its tributaries on all sides is running strong as it must do some day. Are the primary centres holding back for "some day"?

New York, which has also had the edge taken off its appetite and the level of its prices as the sovereign has appreciated in value, is also noticing that whilst her prices go back the "cables from primary points indicate a very firm tone and while little buying is being done by the United States, enough foreign buying is taking place to keep these primary markets quite firm."

This is out of Messrs. W. R. Grace and Co.'s report, which then goes on to say: "Trinidad has been particularly affected by the foreign buying and while there is but small demand for this grade in our market (i.e., New York) holders are very firm. This is due to the primary markets being much higher than the market in America." Complaints are rife that really fine Trinidads are scarce and that is why the price for them has moved up whilst the price for the cheaper kinds as well as fine Grenadas have gone back 2s. On the other hand plenty of offers seem to be about for the commoner grades but not so many buyers. The moral to this little tale is quite easy to guess. Stop doing slop-work in connection with the preparation of the beans, and send more fine quality to market which is wanted and has been selling up to 148s. and 150s., leaving others to send the commoner grades.

It is rather strange how several of the centres: Venezuela, Trinidad, the Gold Coast for instance, are all speaking of a sudden pull-up in output, yet this is the case and the exporters are hoping that further supplies will soon start coming in again. Of Guayaquil on the other hand we have directly contradictory reports. Messrs. Grace speak of the crop as being small this season, so that no important reduction in prices is looked for from that quarter. In London, on the other hand, when speaking of Ecuador's scandalous default in remitting interest on their bonds, it was claimed that "the current cocoa crop is said to be biggest on record." This is a very definite statement, in fact both of the reports are quite clear but very difficult to reconcile. But so long as the value of the sovereign keeps up in America, the price over there, in cents, is bound to be maintained.

Of Bahias and Sanchez we hear but little news. In New York the parity may be equal to that in Bahia itself but it is not above. Sanchez cocoa in America also keeps firm and if these different grades show such strength, other kinds that come into competition with them should keep up in value as well.

When examining the following stocks and values, it must be remembered that the franc is worth but half of its value a year ago. This being so, the present value on last year's parity (at 8d.), would work out, with Para, at 180 to 185 fr. against 145 to 150 fr. last year, or Trinidads much the same and the others in proportion. This reminds me; whilst those who seem unable to realise the extent to which many exporters

increases have to be discounted because of the adverse exchange are complaining, as with prices in France, of the big profits being made, many producers are finding fault with these same prices for not having run up as with sugar, cereals, &c., which are many times their pre-war value, whilst cocoa is about 120 per cent. up only, against 150 per cent the average increase in foods generally. Of course in these rises allowance must be made for increases in freight, estate costs and living and such increases come heavier compared with the nett profits of cocoa than with sugar, beans, vegetable-oil, &c., which show a rise of over 300 per cent.

Going back to Havre, her movements for March were:—

Havre's Stocks and Prices on March 31st.

	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará	3,968	360 to 370	—	145 to 150
Bahia	19,422	340 ,, 365	4,560	135 ,, 145
Venezuela ...	19,012	335 ,, 450	3,291	148 ,, 185
Trinidads ...	25,518	360 ,, 370	17,319	146 ,, 155
Grenada & O.W.I.	28	330 ,, 355	2613	142 ,, 150
San Thomé ...	11,352	325 ,, 360	4	138 ,, 145
San Domingo ...	164	315 ,, 320	—	130 ,, 140
Haiti	14,418	300 ,, 330	1,611	125 ,, 135
Accra	29,819	300 ,, 320	1	120 ,, 130
Guayaquil ...	18,166	315 ,, 405	2,048	142 ,, 152
Other kinds ...	4,994	—	225	—
Totals	...146,861 bags		31,672 bags	

During March, Havre received 48,000 bags (20,000 Trinidads) and delivered 84,000 including 13,600 Bahias, 14,000 Accra and 26,500 Guayaquils.

Against this, London, on April 17th, had the following stock which was helped along during the week ending April 3rd, by our having received 10,300 bags Accras and 13,600 other kinds, leaving us in the end—on April 3rd—with 151,663 bags. This dropped to 150,438 bags on April 10th, and then went to the following figures:—

London Stock, April 17th.	1920 Bags	1919 Bags	1918 Bags	1917 Bags
Trinidads	17,419	14,098	14,926	18,892
Grenadas	20,131	8,624	24,124	23,032
Other W.I.	7,975	5,273	11,012	28,412
British African ...	37,734	38,751	56,747	41,050
Portuguese African ...	11,598	7,131	4,734	23,097
Cameroons	1,378	476	4,823	16,916
Ceylon and Java ...	14,007	13,841	23,555	30,129
Guayaquils	25,095	29,686	43,957	65,437
Bahia and Brazil ...	132	1,011	4,659	8,947
Other foreign ...	16,313	2,936	4,243	8,637
Totals ...	151,782	121,827	192,780	264,549

* * * * * *

And now I am obliged to use stars, they are useful when you do not know what to say and how to say it. Also perhaps they are a little descriptive of what the cocoa market saw after the public auctions, when it again came up flat against one of those checks or barricades that I have already spoken of. But it was not a gentle one this one. It was a perfect collision without springs and although no bones were broken, a good deal of wind was expelled. It was such a splendid sale, not too large, just under 10,000 bags, with just such an assortment as would have, on any other occasion, caused excited bidders to run Grenadas—of which 3,500 were offered—up to 149s., and other growths *pro rata*. Instead of this, except for an odd bid of 120s. here and there, not an effort was made to purchase anything. Under the hammer, except for damaged cocoa nothing was sold and those present retired to think things out, and I have just a week to await results before finishing off. No one pretends that what I have said in the first portion of these notes, above those stars, is not still quite correct, but that does not improve matters for an anxious set of sellers, it only aggravates the situation.

During the sales the American mail was delivered March 26, which showed that market to have been very much as we seem to be to-day. Possibly the slump has been gathering strength over the holidays and has only now been able to show its head. How does New York stand to-day I wonder?

At the end of March, their market had a downward tendency and lower prices than Bahia superior 21½ cts., Trinidads 21 cts., fair fer.: Accras 18 cts., Summer Arriba 25¾ cts. were expected. Bahias were reported flat, with no one interested in them any more than with Grenadas over here. The holders of Guayaquil were growing nervous. (If that Republic had shipped cocoa some months back to pay its debts how much better for her would it have been). As it is the American makers were looking askance at the mountains of powder, probably made for Europe, that threatened to fall on the top of them.

When a thing has to be done, it is best to let it be well done. A check was needed to put some balance on the world's cocoa market and it seems that it has had that check, quite a good one. Now we must watch the results to see what will happen next.

All the same, buyers and sellers of raw cocoa must not imagine that the market has had its back broken, for it has not. The engine has been stopped, but the fire is still alight, and the steam all ready to go into the piston when the time comes.

Mons. Emmanuel Faure has sent me the Bordeaux stock on April 15th. Here are the figures:—

Total stock, 5,939 tons (95,258 bags), including:—

	Tons		Tons
Brazil ...	2,035	Guayaquil ...	161
Accras, &c. ...	1,577	Congo and Madagascar	687
Trinidad ...	306		
Venezuela ...	241		

Havre on the same date (April 15th) had 133,105 bags, or 14,000 less than at the end of March.

The Board of Trade returns for the United Kingdom to the end of March are not so good; it must be that women having discovered the cigarette, and finding chocolates too costly, considering that most of them are but camouflaged jellies, fondants, nuts, &c., have taken to smoking more than ever and so given up chocolates. What do you think? This is Mr. Austen Chamberlain's view on the subject when telling the House of Commons of the large increase in the consumption of (and hence in the revenue from) tobacco. Last year 150,000,000 lb. went into consumption, against only 114,000,000 lb. during the fiscal year of 1918-1919.

"Broadly speaking," claimed Mr. Chamberlain, "this may be attributed, first to the continuous rise in wages, secondly to the return of our armies from abroad, and thirdly to the growth of the habit of

smoking among women." As a rule, those who smoke are not keen on chocolates, certainly they cannot surely eat them whilst smoking. Some shemales, however, seem capable of doing anything along such lines, but not all.

For better or worse, the Board of Trade figures work out as under:—

Raw Cocoa only.

	Landed Tons	Del'd. H.C. Tons	Export Tons	Stock Tons
March, 1919 ...	15,574	6,786	362	43,850
,, 1920 ...	12,707	5,070	2,259	48,450
	Decr. 2,867	Decr. 1,716	Incr. 1,897	Incr. 4,600
Jan.-Mar., 1919	39,645	16,500	362	—
,, ,, 1920	33,103	15,448	10,597	—
	Decr. 6,542	Decr. 1,052	Incr. 10,235	

Going by deliveries, of course, this year leaves 1919 well behind. Because, however, we can export raw cocoa, that is no reason why our home consumption should fall away.

With regard to foreign-made chocolates (with sugar as opposed to powder), we received 1,774 tons for the three months, against 1,337 tons taken into consumption. The movements in foreign powder seem to have been quite insignificant.

Coming to prices and values, I do not know what to say. It is claimed that the large manufacturers have well lined their factories with raw cocoa, and so can keep aloof of the market. The way that Grenadas are being treated inclines one to think that this must be so. On the other hand, the French exchange has improved and the German market is better than it was, so export orders should come along, and will do if those quicksands on which this demand stands do not start to "wobble" again and chase buyers away.

Whilst all producing centres are firm in their ideas and comparatively high in their quotations against New York and London, it is at the moment impossible to place our rates higher than:—

Trinidads.—Best marks, 145s. to 146s.; good middling to good red, 142s. to 144s.; low middling to middling, 137s. to 140s.

Grenadas, for what sold, stuck at 132s., but does this mean that what remains unsold is worth less because of anxiety to sell or more on account of the holders refusing to acknowledge 132s. as the market price for fine marks? On such a basis, however, good red would go at 128s. to 130s., and common down to 10s. less. The same applies to St. Lucias, and in a modified degree to Dominicas and Jamaicas.

Guayaquils are quite a dark horse, first as to real crop, then exports from Ecuador, and lastly as to values on this side. Until actual sales prove otherwise, quotations run from 175s. to 180s.

Bahias, *St. Thomés* and *Accras* are quoted so high at their export centres, one hardly likes to talk of prices here. I have been placing the best of the first two on a parity with good Grenadas, and good Accra about 10s. below, but at the moment this does not seem to hold good.

Ceylons for good bold are worth 190s. to 200s., fine up to 205s., ordinary 180s. to 185s. *Java*, pro rata.

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The Proposed International Association to Advance and Safeguard the Vegetable Oil Industry.

Chemin faisant, we have been discussing the need and the utility of the above Association with "Our Friend" for this month who wrote asking for particulars. As a result of our reply Mr. Pickering Jones stated that he would bring the proposal to establish such an Association before the notice of the leading West African merchants.

Meanwhile we have sent out copies of our March and April issues to leading producers of coconuts or exporters of vegetable oils at the chief centres abroad. The list includes the Planters Association of Ceylon, Malaya, S. India and Malabar, the West Indies, &c. Also to the Manila Merchants Association and to Prof. Baker (of the Los Baños Agricultural College) in the Philippines. In pre-war days we should have printed 500 or more extra copies of such an issue and sent them round the world, but with costs of paper and printing running up whilst the price of copra, &c., tends downwards, we do not feel willing to do so as yet. We felt rather, that if the vegetable oil kingdom wishes to establish a parliament of its own, it will do so without forcing us to such an expense at the start. As soon as we hear from our subscribers and others abroad, and when Liverpool, London and Marseilles, where M. Emile Baillaud has full particulars of the idea, show an interest in the matter, no doubt a meeting can be arranged and a start made. We will go slowly but surely. What we do want to do is to have the Association in being and at work before next year's Tropical Congress. If this can be done and a paper read on the subject before the various delegates, then the foundations of the Association should be both wide-spread and solid.

Meanwhile please let us know your views on the matter. With TROPICAL LIFE and the headquarters in London, equally important centres for propaganda work to encourage and regulate the output of vegetable oils generally would also be needed at Marseilles, Liverpool, in New York, at Manila, Colombo, Singapore, in Southern India, Sydney (for Australia and the South Seas), &c. There is much to be done, but whilst many express approval of the idea and offer to subscribe, we find that it is difficult to move. The subscription, $10 American gold, or its equivalent, is quite modest, but then a big and wide-spread support is expected and so the Association should not be expensive, *per capita*, to run. Its success will depend upon the time that can be devoted to starting it.

The 1921 (London) Rubber, Cotton and Tropical Produce Exhibition and Congress.

THOSE who were keen on the World's Cotton Conference which took place some little time back in the United States, will be glad to know that the next meeting of this, now, international organization, is to be held in this country and to take place next year.

What a help it would be to Empire cotton production if arrangements could be made for the Conference to take place in June at the same time, June 3rd to 17th, as the Rubber and Tropical Produce Exhibition at the Royal Agricultural Hall. If this were to be done, a full range of samples might be shown in the Cotton Section of the exhibition so that those who wish to take up cotton planting or improve the qualities that they already are growing could learn to know why Egyptian cotton sells or has been sold at over 80d. lb. and why Sea Island cotton is also so valuable, whilst other kinds sell at 35d., 30d., and 25d., for middling American.

Even when such prices come down to a more normal level, actual and possible cotton planters could be encouraged to increase our production by being told which kind or kinds are mostly needed at the moment, where it can be produced under most favourable conditions and how reliable seed can be obtained. A producer of fine cotton in Brazil called on us the other day to ask where Caravonica seed can be obtained. There must be many such men and inquiries about, and, if this Empire is ever really to produce its own cotton within its boundaries if possible, or in Brazil and elsewhere if not, we must be able to supply such inquirers with all they want.

This takes us on to the next stage, viz., a centre where fully and widely experienced cotton-planting experts can be collected in order to demonstrate what can be done to safeguard our cotton industry up north, by producing raw cotton overseas. Too many quack experts have been taken up in the past to ensure success. The mulls and failures that lie behind have caused a general distrust among those who would like to try cotton but shun doing so. This fear must be overcome.

The *Cotton Factory Times* of March 12th, when commenting on the leader "Cotton Production within the Empire," in our February issue, suggested that TROPICAL LIFE was "evidently of the opinion that Cottonopolis does not know everything." If either Manchester or the B.C.G.A. imagine they know everything and that London or the rest of the Empire can teach them nothing, not even about cotton-growing, one must not be surprised at the poor success in our Empire-growing cotton schemes in the past. We sincerely hope and we certainly believe that the Empire has some men somewhere outside Manchester who know how to grow cotton to pay. If there are none, it is a bad look-out for us in face of our experience in the recent past; but if there are, no better chance of bringing such men together is likely to present itself, than at the Exhibition and Congress to be held in London next June. It did so before and will do so again. We hope therefore that it can be arranged for the coming World Cotton Conference to be held at the same time as the exhibition. Even if Manchester had to be the headquarters, important meetings could also be held in London to which supporters of the Empire Cotton Committee would be admitted and thus learn from first-hand sources what is needed and how they can help.

Rubber Notes.

IN spite of the wonderful questioning in the House of Commons to which reference will be made later on, present prices for rubber are by no means satisfactory to the rank and file of rubber producers, indigenous or plantation, and with the higher costs all round rates will have further to improve before the Amazon and many of the Eastern estates can be expected to increase their output at a profit. The joke is that if current prices are too low to enable them to produce at a profit, the world (which claims to know all about rubber production) tells you that the manager is incapable, or the company has been over-capitalized, i.e., placed on the market at double and treble its true value or (which amounts to the same thing) the soil and situation are altogether unsuitable and that such an estate would never have come into being had it not been for the swindling tactics of those responsible for the Rubber Boom.

When, as with Pataling, the estate has got one of the best known experts as its manager (see TROPICAL LIFE, for August, 1912, when Mr. F. G. Harvey was "Our Friend," showing that, even in those days, we recognized the example he was setting to others as to how to manage a rubber estate), or when the company, being one of the first to be put on the market, was floated at truly a nominal price per acre; when soil, atmospheric conditions, &c., have all moved in favour of big production and high dividends, then—the owners are charged with profiteering. Ye Gods! what is one to do? Perhaps the Labour rubber expert who put the question in the House of Commons can tell us. Whether his answer will benefit those who need the rubber, will be quite another thing. It is more than probable that it will benefit no one, and can only be described as throwing mud at a good and faithful servant who having been given his talents (unlike the Labour Unionist over here who will bury them and allow them to go to waste), has developed them to their uttermost to the benefit of all concerned. If the working classes in England, instead of joining the ranks of the most exacting army of profiteers that ever was, only tried to serve those who employed them, and their country and Empire as well, as the manager of Pataling has always done, what a much happier, more prosperous and in every way much stronger and more powerful community we should have been by now.

On March 29th Mr. Alfred Shortt, one of the Labour members, asked the Secretary of the Board of Trade in the House of Commons if he was aware that the Pataling Rubber Estates, Ltd., proposed to

pay a final dividend of 160 per cent. less income tax, which would make the dividend for the year 1919, 250 per cent. in all. If so, whether he would recommend investigation under the Profiteering Act? In the answer it was pointed out that in so far as rubber is sold by auction it is outside the scope of the Profiteering Act.

We would suggest that a few of the millions accumulated by the various Labour Unions should be invested in overseas development work. One at least of the Labour M.P.'s was very keen on getting the British public to back up Mr. Wilson-Fox's proposals to do so, so why not use their own money in such a worthy and profitable an undertaking if the estate is well managed. Perhaps the Labour leaders are wise enough to realize that no estate that they would have control of could be well managed.

Now if Mr. Shortt could induce the Board of Trade to look into the affairs of the Mkumbi and Manihot Ceara Rubber Companies, now amalgamated, in the first of which we have a number of shares, some good might be done. The history of the German crowd to whom the estates originally belonged and to whom no doubt they will revert possibly through some English nominee and the commercial histories of all those who floated and directed these companies would be worthy of the closest attention on the part of the authorities. We should be very pleased to put them in the right path and save them much trouble if they care to ask us to do so. It is some years now since we were asked to attend a meeting. One wonders why?

Had the rubber producing industry in the past acted as Labour did and is doing now in England, and restricted output in order to corner the market and get a higher profit than that to which they were fairly entitled, where would we have been during the war? Even now rubber producers hold the manufactured rubber industry in the palms of their hands. It is well known that, sooner or later, when labour allows the world to settle down, first by producing all the coal needed, and then by giving up restricting the output of manufactured goods, the demand for rubber will exceed the supply. The trees may be there to give us all the rubber we shall need, although even that is doubtful, but will sufficient labour be there to tap the trees? We doubt it. Buyers have had their day and are still purchasing below a fair price, yet so far no Labour member has questioned the big profits that rubber manufacturers must have made since the war started and are still making. Again one wonders why. Perhaps Mr. Shortt can say.

The shortage of cotton is checking the making of tyre fabrics, and of the quantity produced America, as with sugar, is demanding and has received a big share. There is no restriction of output in America[1] and so motors are more common over there than strawberries have been in England since the war started. The working class over here could have been even more prosperous than their fellows in America had they worked as willingly and shown those who employed them how to grab the markets of the world before the war started as America has done. If America with only 110,000,000 people for her home market has done what she has in the motor and rubber manufacturing industries, think what Labour in England could have done by now, with 45,000,000 over here and the rest of the Empire thrown in, to say nothing of Latin America. Why, the U.S America would have been nowhere.

As we are to-day, the shortage of cotton and coal, the general absence of purchasing power on this side except from War Profiteers, Labour or otherwise, together with adverse exchanges, are all curtailing the immediate demand for rubber. Add to this the lack of capital in France and Italy, the upset in Russia, dominated by German military leaders and tacticians who have no idea of allowing this country to enjoy the fruits of our victory, it is no wonder that the price of raw rubber remains so low whilst sugar is nine and ten times its pre-war value. When the Germans have got the better of the Allies over evading their Peace terms, and can settle down to manufacture rubber goods on an immense scale for the Russian and central European markets, mainly with rubber produced within the Empire, you will find that the German leaders of the Bolshevists will allow that country to settle down and so be able to buy rubber and other goods—made in Germany. Until this can be done Russia will continue to be as unsettled as she is to-day, thanks to Germany.

Thus the producers of rubber have much to look forward to and think about. It only remains to be seen how they will act. Will British producers be willing to sell their rubber as freely to Germany or to her neutral Allies, as to ourselves and our Allies? If they do, then Labour in this country will have something else to ask questions about in the House of Commons, besides troubling whether a rubber company, which was sold too cheaply in the first place, was not profiteering because its manager had developed and made full use of the talents that Providence had given him instead of burying them in the earth so that they could not benefit his fellowman, as Labour is doing over here.

---

* Remember what Gompers, the English labour leader in America, told us: "Bring in all the improved machinery and the new tools you can find, we tell the employers (in U.S.A., not in U.K.). We will help you to improve them still further, and we will get the utmost product out of them." See our Editor's series of articles on "Rubber Machinery of To day and To-morrow," in *The Indian and Eastern Engineer*, of Calcutta and 50, Fenchurch Street, London. The above appeared on p. 93 of their issue for September, 1919.

WHILST fears have—with reason—been expressed that a shortage in supply of some grades of cotton may reduce, at least for a time, the output of rubber tyres, another cause of anxiety has arisen over the idea that the demand for petrol throughout the world as fuel for the motors needing the tyres may also come along to help check the demand for rubber. Many proposals have been made for increasing the output of commercial alcohol to take the place of petrol, one of them being to increase the output of maize to such an extent that large supplies of alcohol from this source would become available. Were such a thing to be seriously considered one wonders whether by careful selection the ability of the maize to increase its alcohol-giving power, as with sugar in the beet, would be possible. At present the idea appeals rather to the imagination than to the pocket. Who can say, however, when it will interest the pockets of the public as well?

LAST month (p. 60) we suggested, on the basis of what the *Bulletin* of the Imperial Institute had to tell us, that there is a possibility of utilizing the mowra flowers of India as a raw material for the manufacture of commercial alcohol. There are, however, other sources to which we can look for the basis of such an industry. We are reminded of this by a letter that came to hand a little time back and which can be boiled down to the following:—

COAL V. INDUSTRIAL ALCOHOL FROM TROPICAL WASTE.

Last month we were told by experts writing in the papers that our coal exports worked out at 77s. ton f.o.b. against 35s. last year and 13s. in 1913, or just one-sixth the present price.

Truly can it be claimed that the people of the world tend to increase at a greater rate than the supplies of food they put out until the supplies run so short that the increase in the population is bound to stop. It was ever thus with "humans" and other animals. With populations in the past, this has been only too apparent, but to-day it is far more serious than ever before, both as regards food and fuel—and fuel some say is the worst. Think, therefore, all you political economists on the one hand, and you who waste raw materials that could make industrial alcohol for fuel on the other, what millions of tons of fibre waste, of coconut juice, of rotten bananas and fruit, &c., go to waste every year in the tropics instead of being turned into fuel which is badly needed.

Sir William Ramsay long ago told us that supplies of coal in the United Kingdom could not go on for ever. We may, however, find more in Brazil, China, and elsewhere to carry on with, for coal is a solid and cannot move; not so petroleum, however. Who can say that the big flows are not all joined together? If they are then any day one will be tapped dry and all will be exhausted like the taps in a house when the water is turned off at the main. We have much more faith in the coal supplies lasting than we have in America's or Russia's oil wells continuing to gush. When they do cease, then the turn of the tropics will come—with fibre and fruit-refuse now being wasted or proving a nuisance, and even a danger, whilst rotting under the tropical sun. These and many other things can be turned into industrial alcohol, and so encourage cultivation to be extended when the profits on the crop itself would not justify doing so without the help of these by-products.

What a subject to be laid before the Congress in June, 1921, for discussion by those able to guide public opinion on so important a matter!

COMING to prices, there is not much to say, but those with rubber to sell may be interested in my remarks on pp. 79-80, on the ever increasing disparity between the price paid by buyers to producers on the one hand and by distributors to consumers on the other. A cotton spinning dividend of 533 per cent., is a clear case in point. If rubber is below 2s. lb., no one can deny that the cost of manufactured rubber goods has reached such a height that the demand is being held in with all the power possible—*cui bono*, not to that of the planters or consumers. To the excess profits tax: Yes! Also the profiteers who make the profits.

ANXIETY over petrol supplies and a difficulty in getting cotton fabric for tyres, do not seem likely to encourage the output of motors. The London papers on the day of writing these notes were full of the shrinking output in America where so many motors are made. Well, there is room for some factories over here still, and plenty of "demobbed" men and women to work in them, so let us hope that, whatever happens in America, the demand for tyres will go ahead over here.

ACCORDING to Messrs. Lloyd, Matheson and Carritt, the stock of plantation rubber in London was 23,082 tons against 18,875, a year ago, whilst Liverpool returned 700 against 900 tons. Against telegraphic rates in Singapore of 78½ cents for standard crepe (=2s. 0½d. London equivalent) and 75½ cents for Standard Sheet (1s. 11¾d.) spot quotations over here included:—

	May 13th, 1920.	May 6th, 1920.	May 15th, 1919.
	s. d.	s. d.	s. d.
Smoked Sheet (F.A.Q.) ...	1 10½	2 1½	1 11
Crepe (Standard Quality)	1 11	2 1¾	1 11½
Para...	2 2½	2 2½	2 5¼

Forward Positions—	Smoked Sheet. s. d.	Crepe. s. d.
1920, May	1 10¾	1 11¼
,, June	1 11½	1 11½
,, July to September ...	2 0¾	2 0¾
,, October to December	2 1¾	2 1¾
,, July to December ...	2 1¼	2 1¼

From other sources we learn that Balata is worth 4s. 7d. for West Indian sheet, 3s. 8d. for Venezuelan block, 3s. 2d. Panama block, and about 3s. 5d. for Tumaco.

Ceylon and India as Exporters of Coconut Products.

What the Malabar Coast or Southern India generally is doing with its magnificent coconut industry, and how that industry fared during the war we cannot say, since no details are published for distribution, as is the case with Ceylon, or, if they are, none have ever reached us.

With Ceylon, her statistics for 1918 and 1919, as published by the *Times of Ceylon*, are very interesting, and also instructive. This is why we would be so glad if Southern India, through the *Madras Mail* or other paper, would give us a similar table of exports. Good as Ceylon's trade has been, taking into consideration the obstacles against which it has had to contend, one cannot help wondering what the total exports of palm products from Ceylon would have stood at to-day had there been no war. We cannot help feeling that they would have been much larger, and so it is with the Malabar Coast. What exports of copra, coconut-oil, &c., we wonder, left there in 1919 compared with 1918, or the year 1913, before the war?

These are particulars which we all should know through their being as accessible to us as the statistics are from Ceylon. If we were in possession of such figures, competent men could see where and how the Malabar Coast could be further developed with benefit to its native inhabitants and to the local exchequer; where pests, human, insect or otherwise, need attention, and where better transport facilities or increased capital could be introduced to the benefit both of producers over there and consumers in the United Kingdom, and, incidentally, throughout the world. If anything is being done along these lines, why be so secretive about it, when publicity of a friendly and disinterested nature goes to build up the very life-blood of such an industry?

As it is no one can imagine that India, with its vast possibilities for coconut and vegetable-oil production generally, does more than touch the hem of what she could do were her coconut industry to be developed and organized as it should be in times like the present, when the world wants all the products, and India, as a country, needs the revenue resulting from their sales. The native owners of coconut trees want money also, judging from the reports that came to hand in 1916, and unless their state to-day is very different to what it was then they still do. Turn to our issue for August, 1916, p. 125, and see what we said; to save trouble, perhaps we had better repeat the words; they are as applicable to-day as they were then, perhaps more so.

Things from all accounts, we pointed out, are not as they should be in Malabar, and therefore, once capable men can be brought to bear upon the industries of that centre and given instructions, as well as the means to develop them along the best lines known, not only will the white race benefit, but also, and what is more important still so far as India is concerned, the status of the natives would be raised, and their level of comfort and economic condition greatly improved.

This is confirmed by the local authorities as well as by the Press, including the *Madras Mail*, which tells us that "Mr. C. Krishnavarma Rajah, of the Mankada family at Valluvanad, who is a member of the Malabar District Board, and owns extensive landed property among the Moplah Talugs of Malabar, writing in the *West Coast Spectator* on the recent Moplah outbreaks, strongly pleads for a Government inquiry into the conditions of life in the Moplah country and the causes that lead to periodical outbursts of lawlessness. He says: 'The chief cause is economic, which finds rapid growth in the unhealthy atmosphere of ignorance. The poor and the destitute from whom the dacoits are recruited should be given occupation and the means of earning their livelihood. The middle and the richer sections of the Moplah community should be given secondary education, and facilities should be afforded to obtain this by starting a High School at Perintalmanna, and elementary and industrial schools at convenient centres.' The writer further says that the congestion which breeds criminality and poverty in the Moplah Talugs should be relieved by opening up settlements like those established for tribes other than criminal in Guntur, Madura, and South Canara. Wynaad affords admirable scope for such settlements, having extensive tracts lying undeveloped. As Mr. Krishnavarma says, the Government should realize the importance of the question and direct an immediate inquiry."

This was four years ago. Whether any inquiry as asked for was instituted or not we cannot say, but we have always kept this paragraph before us as being indicative of the poverty and misery of a people living in or near one of the leading, if not the chief, coconut areas of the world, from which produce galore could be, and should be, extracted and shipped, to bring back money and goods to the workers, who evidently need them more than most communities.

For this reason alone the coconut industry of Southern India has always appealed to us as being of unusual importance because unusually neglected. Our opinion on this point requires comparative statistics similar to those issued by Ceylon before it can change. With Ceylon, however, one feels that neither the industry nor the natives have been neglected, both have been made the most of. Whilst the war has been raging in Europe Nature has not stood still in Ceylon, so one can be excused if they wonder what that island's full output of coconut products—home consumption as well as export—would work out at to-day compared with March, 1914, and Marc, 1904, if we had the means of ascertaining their home consumption. What steps are necessary, if any at all, to still further increase Ceylon's coconut industry, and also what can be done to bring the low Malabar tribes and their coconut industry generally up to the level of Ceylon, judging by the returns now before us for 1918 and 1919.

Knowing all that Ceylon underwent to help win the war, the following particulars may not always be as full as one would have looked for. All the same they are worth noting. In 1918 the island exported 58,240 tons of copra, which increased to 86,852 tons last year. On the other hand, only 3,121,154 coconuts were shipped, against 5,540,513 in 1918 and, adds the *Times of Ceylon*, 16,114,088 nuts ten years ago.

This falling off may go for nothing; it probably means that more copra, oil, or desiccated coconut was turned out instead. Talking of copra, 86,852 tons were shipped in 1919, against 58,240 during the year before. Of this, India took 28,062 tons last year, against 44,830 tons in 1918, and the United Kingdom only 7,612 tons, against 25 tons. Why so little, one would ask, especially as over 40,000 tons went to the continent, including 8,060 to Germany and 15,652 tons to Holland?

In 1918 Egypt and India were the only places to import coconuts, but last year Egypt took much more oil, say 2,180 tons, against 677 tons the year before. The United Kingdom took a good deal of oil, say 19,632 tons, against 21,645 in 1918, and the U.S.A. 7,947 tons, out of Ceylon's total exports of 85,630 tons last year, and 57,903 tons in 1918. Another product, desiccated coconut, showed exports of 22½ million lb. in 1918, which jumped up to 75¾ millions last year.

Compared with this, we shall probably never know what India could put out in the way of palm products, including sugar. The aggregate, however, would be immense, and we all know how ignorant even official India is, or was, as to the progress being made elsewhere in connection with coconut production. They do not or did not even know of the character of the best books published recently to help the industry. One wonders whether the present officials in Madras and throughout the coconut belt have heard of Messrs. Munro and Brown's book as yet, or whether they still doubt the utility or unbiassed nature of this, as of "all books published in London" dealing with coconuts? How could the industry flourish when those in charge did not even know of the lesson books, to say nothing of their contents?

Fertilizers the Main Hope for Relieving the Sugar Shortage.

"Thinking men who know what has been going on behind the scenes in the sugar production world are concerned as to what the future has in store for us in the way of supplies and prices of this most necessary article of food and raw material in many industries." These, the opening words of our brochure on "The High Price of Sugar,"* were very true when they were written over three years ago, but they are trebly true to-day. Yet we would claim that, beyond talking and increased anxiety to do something, not only has nothing been done, but the position to-day and prospects for to-morrow are causing far more anxiety than they did in the autumn of 1916. No one perhaps is to blame, but that does not alter the fact. It should, however, impel us all to bestir ourselves and to start at once and add to the present inadequate supplies of sugar as speedily as possible.

There is only one way to do this at once, and that is (1) by not allowing present outputs to fall off; (2) by trying to increase previous outputs, no matter how satisfactoy they were.

To do so by the only means possible, viz., by an increased use of fertilizers, offers a double advantage. Firstly, it gives the planters more sugar to sell when prices as now are so high, and, secondly, the increased tonnage per acre that he will receive costs less per ton to produce than the same quantity spread over a wider area. It also takes less labour per ton to produce, and that is the most important of all. It was the chief cause that led us to write the "High Price of Sugar," as at that time, it will be remembered, not only was the tropical world generally becoming more and more inclined to be short of the labour needed for their full development, but the decision of India to check and stop the indentured coolie system had become a fact, causing, as we then claimed, every worker in the near future to be worth two ordinary ones before the war. To-day we have reached that stage, and yet India gives no increase, and other cane-sugar centres show no signs of going ahead as we would like to see them do.* Lack of fertilizers and the dearness of labour have kept them back. This is why it has become necessary to strain every muscle to increase the yield per acre, since by doing so we render ourselves less dependent on labour and can reduce our costs per ton.

"The output of sugar in Trinidad in 1919 proved far short of what might reasonably have been expected," wrote Messrs. Edgar Tripp and Co., most reliable of authorities in that island. This was on December 31st last. "There was every inducement in the matter of remunerative prices to stimulate both estate proprietors and cane farmers to increase production, and efforts generally were no doubt made in this direction. Favourable weather seemed to further justify the hope of a bumper if not a record crop. Even the cane's worst enemy of late years—the froghopper—desisted, or was prevented from making the virulent attack of former years. Yet the ultimate result was most unsatisfactory. The total crop amounted to 47,850 tons, or only 2,594 tons more than that of 1918, when the ravages of the froghopper had been far more severe, and less by several thousand tons than those of the four previous years. Perhaps the most reasonable explanation may be found in the difficulty experienced in obtaining sufficient artificial manures. Otherwise probably more intensive and higher cultivation had been applied formerly." Trinidad should, and if given the necessary fertilizers, soon would produce at least 100,000 tons of sugar per annum instead of an average output of but 50,000 tons a year as she had been producing of late.

The beet industry in Europe will need fertilizers, especially nitrate of soda, as much and more than the cane fields in the tropics. On account of the greater distance from the nitrate fields, and especially on account of the adverse exchange and lack of liberal supplies of beet-seed, the Continent is still handicapped against British cane-sugar producers in every way. For all that, unless more energy is thrown into the British production of cane-sugar, the Continent will regain its feet and tower ahead again with beet sugar as she did before the war. One wonders why; where does the shoe pinch?

* Tropical Life Publishing Department. 1s. 6d. post free.

* See p. 67 on "Sugar Production in India."

It cannot be through want of incentive. The present shortage of sugar may be relieved in a year or two, but even then the world must restrict its demand. We are bound to have less sugar than the world will need and be anxious to buy for years to come. This is why cane planters must be given access to more fertilizers, and having that access they must buy freely. If they do not do so they will never go ahead, but go back, with poorer yields and increasing costs; and unwillingness and inability to adequately manure will be an important contributory cause to their non-success. At present nitrate of soda is badly needed. Situated close to Chili and with the Panama Canal open, such supplies must be easily available if called for.

Take the present population of the world, and remember our consumption of sugar before the war was 119 or 120 lb. Now it has fallen back, but can swing forward easily to 130 lb. or more. America in 1913 or 1914 took 80 lb. only. To-day, with 110 million people and "Pussyfoot" rampant, there is difficulty in saying what sugar she will need. Probably more than the whole Cuban crop and still say she goes short. Meanwhile our esteemed contemporary, *Sugar* (of New York), claims that had the war not broken out, the world—now producing under 16,000,000 tons (Willett and Gray) as its 1919-20 crop, would have called for, and actually should have had, 26,300,000 tons and that by 1932, twelve years hence, it will take 36,000,000 tons to satisfy our wants. This is over double the quantity produced even in the 1917-18 campaign (17,288,526 tons). Fertilizers must be used to bring this increase about. This is the sermon we drove home in 1916, by means of the "High Price of Sugar," when we asked for two tons of sugar for each one then produced up to that time, when those who posed as sugar experts wanted to turn the book, or rather the teaching in the book, down as being mere theory. Sometimes theory is better than practice. It certainly cannot be worse in the case of sugar-production within the Empire at the present time.

Those who claim that demand creates supply can well point to the success attained by the Royal Colonial Institute in its efforts to help satisfy the importunate demands of the Empire concerning its wants both for the present and the future.

The present membership of the Institute, according to the last report, to December 31st last, was 14,705, against 9,088 at the end of the last complete year (1913) before the war. Here one can feel is a well-organised and carefully trained army spread throughout the Empire, to help develop its resources, extend its trade and assure the benefits of such work to-day for the generations to come.

This inclines us to say that in the same way as when recruits were wanted for the army, they had only to be called and appealed to in the right way for them to come, so has the appeal of Major Boosé, Sir Harry Wilson and others, been responded to by just the type of man and woman that the Empire most needs to man the ship at the moment. It must be a pleasure as well as a honour to work with such helpers.

(*Continued from p.* 72.)

organist to that of overseer of the poor, and chairman of the (rich) Association of West African Merchants. All of these posts bring plenty of hard work, little thanks and are productive of no outside glory; all the same, the amount of public good done must be substantial.

Evening extension classes and a liberal use of the Picton Reading Room helped to build up the foundation of Mr. Jones's training. As to-day his two hobbies are, we believe, music and French literature, the foundation must have been well and truly laid, and can well encourage those who (as with ourselves) cannot expect a University training, to realise what can be done "at your own door," when there is the wish and the will to get on.

After two years with a firm of underwriters, the year 1883 found "Our Friend" in the service of the African Steamship Company, and there he remained until, in 1889, when the Lagos Stores, Ltd., came into being, he was appointed secretary, and later, in 1903, the manager. Now he is a member of the Board of Directors, and as the late W. S. Gilbert would have added, "a right good director, too." Mr. Jones is also a director of that merchant giant, the African and Eastern Trade Corporation, as well as of the British Nigerian Co., Ltd., and the African Transport, Ltd.

Vice-chairman of the African Section of the Liverpool Chamber of Commerce in 1910-11-12 and also in 1915-16, Mr. Jones was elected Chairman of the Section for 1917-18. The next year—1919—found him Chairman of the Association of West African Merchants, of which now he is, strictly speaking, acting chairman. He has agreed, we are glad to say, to act as the representative of the Liverpool Chamber of Commerce and the Association of West African Merchants on the Committee of next year's Rubber and Tropical Products Exhibition in London. He also represents the Liverpool Chamber of Commerce on the Raw Products Committee of the Imperial Institute.

Last year whilst chairman of his Association "Our Friend" organized the first Anglo-French Conference of African Merchants, which was held in Paris in last May, and was chairman, as stated, of the conference held this year as a return visit in London. Born in 1866, we believe that Mr. Jones has let very few weeks or even days glide past him without bringing some intellectual benefit to himself, and through that considerable economic benefit to others.

We are glad to see that the Spanish Supplement of the *Times* is going ahead. It looks prosperous and, we understand, its looks speak true. Although it started but quite recently as an auxiliary bound up in the Trade Supplement, Mr. Sheldrake the editor, and Mr. Bonafoux, who is in charge of the Spanish contributions, soon enabled the new comer to be issued as a separate publication (price 4d.) and the coming June number will require a score of pages to take all the useful and up-to-date information that the editor and his deputy have collected together for that number.

"Tropical Life" Friend.—No. 179.

Mr. James Pickering Jones.

Chairman of the Association of West African Merchants.

The three days' conference in London last month between the leading French and British merchants connected with the West African trade, brought Mr. Pickering Jones to the fore as chairman of the proceedings which have certainly left their mark, a fairly deep notch too, in the record of the Empire's determined attempt to go ahead now that the war is over. To be chosen the chairman of such a gathering is proof of how Liverpool regards "Our Friend" for this month and, it is well known, that when Liverpool men do make a choice, it is sure to be a good one.

It must have been an animated scene at the Ritz Hotel in London, when Mr. Jones presided at the banquet offered by the Association of West African Merchants to the delegates of the *Union Coloniale Française* who had journeyed across to discuss with their fellow merchants on this side the best way to govern Africa and develop her trade for the benefit of the natives as well as of the French Republic and our own Empire. Supporting "Our Friend," to do honour to the visitors, were the Earl of Selborne, Mr. Cecil Harmsworth, M.P., Under-Secretary of State for Foreign Affairs, Sir Ronald Ross, Colonel Amery, M.P., our Under-Secretary of State for the Colonies, and Mr. J. H. Batty. It had been hoped that Lord Milner, our Colonial Secretary, could also have been present, but pressure of work caused this to be impossible.

The visitors from across the Channel have played an important part in developing France's economic resources; yet like the merchants of Liverpool and London, they feel that they have only started to complete that which they mean to achieve. Among them were Mons. J. Le Césne, Président de *l'Union Coloniale* of France, and Vice-President of the French West African Company; Mons. Léon Prom, President of the West African section of the *Union Coloniale;* Mons. Bohn, President of the *Institut Coloniale* of Marseilles and Mons. Emile Baillaud, Secretary of the *Institut* which is doing such good work not only in connection with vegetable oils, but also to bring Marseilles to the fore as a depôt for rubber, cereals and fibres. The conference over which Mr. Jones presided will go a long way to help the trade, not only of France and Marseilles, but of this country as well, with its leading ports of London and Liverpool. "The conference," Mr. J. H. Batty, the leader of the West African supermen, told those present at the Ritz Dinner, "during the past two days would help, so far as West African problems were concerned, in bringing people to realize that our possessions in West Africa and other parts of the world depended upon our dealing with those problems in a right and just way. We are trustees for those people in West Africa. They were a race of people that deserved our good understanding; they had, throughout the war, served us right well. Many a family would have died had it not been for West Africa, which, he believed, was going to have a great and prosperous future—a future that would be the greater and more magnificent, if France and Britain worked together in their relations with that country, hand in hand." (Cheers.)

The chairman, who presided over the meeting when this and similarly important speeches were made by the leading men in West African affairs, has been well trained to take his place among the others in this useful work. In these days when so many are shouting of all they have done, or believe they have done, through a megaphone so that all shall know, Mr. Pickering Jones, like those who sat round him at this gathering, has kept altogether in the background, especially when praise and awards were being showered around. The man-in-the-street does not even now know what the men present at that dinner have done or why they were there, and yet, as Mr. Batty truly said: "Many a family would have died if it had not been for West Africa and its merchants in England and France."

It is a good many years since we last encountered "Our Friend." Those who have a file of Tropical Life for 1907 will remember perhaps that our Editor journeyed up to Liverpool to be present at an important exhibition of West African and tropical products arranged by the late Sir Alfred Jones and Lord Mountmorres on the occasion of the visit of the Associated Chambers of Commerce then being held. On that occasion we looked in at the offices of the Lagos Stores and saw Mr. Jones. To our loss we have not met him since as we were unable to be present at this year's Conference.

"Our Friend" is a Liverpool man born and bred, and to-day, still in his quiet, retiring way, must be playing a big part in the welfare of that city, for, so far as can be ascertained, he is a member—always an active one—of at least twenty-five committees and organizations, ranging from the post of voluntary

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1.—The address of Tropical Life is Messrs. Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.

2.—All **literary communications** should be addressed **to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

3.—All **business communications and payments**, either for subscriptions or advertisements, should be sent **to the Publishers** of Tropical Life. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

4.—The Subscription, which is **Ten Shillings** per annum, may commence at any time, and is payable in advance. Life Subscription, £5.

5.—The Advertisement Department is at 112, Fenchurch Street, E.C., where all inquiries respecting advertisements, charges, &c., should be addressed c/o the Manager of the Department. At the same time will advertisers kindly note that all copy and blocks for advertisements must be sent to 112, Fenchurch Street, E.C., before the thirteenth of each month, failing which, insertion of same in current month cannot be guaranteed.

6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Advertisers are only entitled to three changes of matter in the year of twelve issues, unless (1) they send electros for insertion, or (2) are willing to pay for the cost of setting up the advertisement. Owing to present high cost of composition and printing work we cannot depart from this rule.

8.—Changes of address should be promptly notified.

9.—Non-receipt of copies of the Journal should be notified to the Publishers.

10.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

May, 1920.

Review.

The French Year Book for 1919, English edition. Editor-in-Chief, Dr. Angelo S. Rappoport; assisted by C. A. Arfwedson. 1020 pp., with photographs, charts, &c. London. John Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.1. Price, 12s. 6d. net; weight, 34 oz.

Here we have a book as interesting as it is useful; those who possess a copy will find it amazingly useful if they will only give up a couple of days to ascertain what there is buried away in the thousand pages between its covers. The contents certainly caught us napping badly for we took the book home to write a paragraph or two on its contents, expecting to be quit of the job within an hour or so as being one of many tasks that we had to accomplish over the Easter holidays. But we reckoned without our host or rather without taking into consideration the lure of the Editor of the book. We did very little more than study the various sections during the four days we were at home and then went back to town with our nose glued to its pages, vainly striving to decide what we should call attention to, and what pass over, so as to get the review into a single column. The reader can see how successful have been our endeavours to do so.

Having fairly well mastered the contents we would hazard the statement that Dr. Rappoport is responsible for much of the historical matter throughout the book. If not, whoever wrote the chatty paragraphs dealing with the traditions of the various institutions in Paris, or those connected with the Provinces throughout France, as well as others introduced in the important (to our readers) sections on "Economic France" (pp. 575-848), and Colonial France (pp. 851 to the end), will agree that they are strongly reminiscent of the style of the author of "Ladies of the Winter Palace" (of Russia). This book was once described as teaching you history without the reader being aware that he or she was learning it. This is our idea of the Year Book. It is crammed with dates, statistics and historical facts right back to the beginning of history, but all set amidst such interesting surroundings that you cannot believe that it is merely an official "blue book" you are studying, although you are obliged to own the information and statistics given are quite correct and relentlessly in order.

The book it seems was the outcome of two ideas, one conceived by the *Congrès National du Livre* held in Paris in 1917, and the other submitted by Dr. Rappoport to the *Comité du Livre*. This is an organization founded to acquaint the world, far more fully than it is at present, with everything that is and always has been best in the culture, civilization and imaginative (but always practical) genius of the French. Whilst rabid pro-Hellenists or pro-Latinists may continue to insist that the mind of a man (or woman in these days) can never be fully developed and so able to reason correctly without the help of the classics studied in the original, we would claim with at least equal emphasis that if a man or woman does not want to live by the sweat of their brow alone, but wishes to learn a little of the romance, and intellectual pleasures of life, the surest and shortest way of awakening that imagination or soul that lies more or less dormant within all of us, and to impart your awakened appreciation and acquired pleasure on to others, is by studying the history of France and her people. They must be students not only of, let us say, Mistral of yesterday, or Ronsard of long ago, but of the language of the people, when the *Langue d'oc* and the *Langue d'oil* were not mere names, and when the Roman, the Goth, the Saracen and the Arab, each came in turn to blend with the Gaul and Celt and help build up that wonderful people known as the French to-day. There is much to learn, and this book starts you on the road you should and must travel if you wish to master the most fascinating of all tales—not excepting Lalla Rookh or the tales of the East—especially as it is a tale that is true and which is by no means finished. On the contrary a

new volume has just been started, one in which we would wager the records to be entered will prove worthy, in every respect, of those that have gone before.

Thus the modern student of economics or *les beaux arts* cannot afford to clip his studies of the French or of their history, politics, romance, wars, their social and intellectual advancement and, latterly, their commercial and colonial development. All these sections are dealt with, clearly and fully (as a start to put you in the way along which you must travel) and it is on account of this clearness, in so comparatively small a space, that we find the book so wonderful—in its utility and interest. And yet it is only called a Year Book. Well if those responsible are satisfied to give it such an unattractive name, it is not for us to criticize their choice.

The object of the work, which is also published in French—Paris, Comité du Livre, 101, Rue du Bac—and whose sub-title describes it as an historical and statistical annual of France, is, we are told, to teach those wise enough to be willing to learn, about the people, the manners, the customs, art, literature, and commerce of her people. This is a tall order, but the book, we consider, has gone as near as possible to achieve what it set out to do.

If ever we wanted to ramble through France as one of us, in 1875, wandered through Spain, without boarding a train, we should certainly take this book with us. If ever we set forth to write a book on the libraries, on sport or on the stage in France, we should certainly have this book, opened at one or other of these sections, at our elbow. In the same way when in our market reports on Tropical produce a query arises over one crop or another raised in the French Colonies, the first book we shall turn to will be this Year Book, for not only has each chapter got its bibliography but each section of a page or more has one as well. All that is needed is for the owner to make himself thoroughly *au fait* with the contents from cover to cover. This we have done.

In the Colonial section at the end we were surprised at the mass of information given within the pages available concerning the population, trade, system of education, and area under crops of each of the colonial producing centres, whilst under Economic France we encountered the same crops, now inside the factories at Bordeaux, Marseilles, &c., and there we followed the handling and manufacture of them until consumed within the country or shipped abroad.

So much for economics. Business first, pleasure after. The pleasure to be obtained from studying the book has no place in this work-a-day journal to begin with, and secondly a whole year of TROPICAL LIFE would barely suffice to record all the memories awakened by a perusal of some of the sections. If this is the case with a suburban "penny-a-liner," what must it be when a politician, author, artist or actor, reared in Paris, comes across some of the pages or sections.

Open the book at random and see if what we, the suburbanites, claim is not true. Turn to the History of Printing, p. 758, which starts with the hand-written parchments, the real manuscripts, of the VI Century, and goes step by step past Jean Gutenberg of Mayence and the great printers of the XVI Century to remind us of the interest shown by Francis I in printing, around 1538, and concludes by discussing the National Printing Works of to-day in their new premises in the Rue de la Convention, to which the department moved in 1914.

We next lost ourselves in a study of the Rubber Industry in France, p. 765 *et seq.*, which will come in very useful before we are many days older. Some of the statistics given are missing—or rather were missing from our book of notes but are no longer so. The world's cotton figures, p. 769, also helped us, as we were writing an article on the universal shortage of this raw material. Here again we found figures that we did not possess; it was the same in connection with the silk, textiles and automobile industries.

The history of the Chambers of Commerce in France, p. 813, will, we feel sure, interest all pressmen. It starts with the Marseilles Chamber founded in 1589, whilst the first trace of a Stock Exchange or its equivalent, we are told, goes back to 1364 (p. 814). Consumption of Copper is discussed, p. 739, oil imports, p. 714. The article on wines, p. 697 *et seq.*, is wonderfully well written and so is that on tobacco, p. 685. Notes included on the Bank of France show that institution to have been started in 1800, as compared with the Bank of England's date of 1694. The original capital was fcs. 30,000,000, raised almost immediately (April, 1803) to £45,000,000.

The history of the Bourbons and the nobility of France (p. 866) must hold the attention, both of politicians and writers in these days, when the fate of the aristocracies of the world are being weighed and, at times, found wanting. Chapter IV dealing with Intellectual France absorbed far more time than we meant to have given to the whole book, but in the old days a study of those men and women who helped to make us what we are to-day had a strange fascination for us and so made us linger over what the book has to tell us. The story of the Seven Troubadours who, in 1323, started in Toulouse what is now known as *L'Académie des Jeux Floraux*. is surely more wonderful than any fairy tale, and yet it is real; it is still at Toulouse and is going quite strong to-day (p. 379). So with the history of the theatre right away to the Gallo-Roman epoch, the Year Book tells us all about it (p. 419), giving also an account of the careers of the chief theatres and the actors and actresses throughout France. It even mentions the *Tabarin;* what a world of memories that one word must invoke—to some people.

Chapter III, preceded by a photo of "Our Joffre," which deals with short historical accounts of the French Provinces, perhaps interested us the most. It resurrected names that are now seldom if ever used, but which it is a great pleasure to know still exist if only on paper. This section we cannot start to discuss, already we have given up far more space to the book than we ought to have done. All we say is, if you have not yet seen a copy of the French Year Book for 1919 buy one at once, and when you do so, start on this Chapter III, p. 181, dealing with the Provinces of France, even to their wines and gastronomic specialities. Do this and you are certain to go through the whole book and be glad you did so—as we are.

Higher Agricultural Education in the British Tropics.

We always have been firm believers in the idea that if you mean to have a thing in this world the first thing to be done is to make up your mind that you *will* have it. If you do so with sufficient vigour and determination then you are sure to get what you want—provided, of course, that you are still alive.

For this reason, therefore, we will start at once and say that, as we are going to have two agricultural colleges, one in Ceylon and one in the West Indies, it may not be amiss to remember what India is doing and what she has done to bring her system of agricultural education to its present level; a level, be it noted, which from all accounts and in spite of the many agricultural colleges dotted about India, still does not seem to satisfy those who wish to see that country regularly put forth larger crops and make bigger profits per man and per acre than she has hitherto managed to do.

This is as it should be. The day a man or a nation is satisfied with what they have got, deterioration is bound to come. No woman we have met has shown the least sign of being satisfied with what she has, no matter how far her possessions exceeded her original demands. It may have been a woman therefore who invented the phrase that a man's reach should exceed his grasp, else what's a heaven for? We are not sure that we know what this means but we like the sound of it, and so slightly altering the wording would say that "a nation's determination to achieve should exceed her apparent ability of doing so, else what's ambition for?" Then we would put India forward as being such a nation, claiming there is no limit to India's possibility of achievement—as with her sugar-production—which we feel sure exceeds what her experts seem able to believe her able to perform at present.

But to be able to achieve one must be trained, and there are those who claim that the training of the Indian agriculturists and landowners is in need of much improvement. The *Indian Planters' Gazette*, for instance, in the issue of March 6th, starts its leading article by telling its readers that the "necessity for agricultural education as a basis for more rapid development of agriculture in India has always been recognized . . . A great impetus has been given to the cause of agricultural education in India by the distribution of an Imperial allotment for the purpose," and so India has had an Imperial allotment to advance agricultural education within her boundaries—nay, more, the I.P.G., woman-like, immediately asks or hints for more. "It is hoped," we are told, "that there will be an *annual* allotment of varying amounts." We are glad to hear of this, but at the same time must ask the Imperial authorities why stop at India—she has her agricultural colleges. Why not start with, or at least go on to, Ceylon and the West Indies, and give them allotments as well, first—to go towards the foundation of their colleges, and then an annual one towards their upkeep? Since India, the big country, is to have an allotment, surely in these days of the upholding and encouragement of small communities Ceylon and Trinidad (or Jamaica) cannot be left out, especially Jamaica, who has offered to help in so liberal a manner towards the establishing and upkeep of a college if planted in her midst.

Let us look a little further afield to see what others are asking for. Take Burma. The necessity for a college and research institute in Burma has been recognized. The necessary plans and estimates have been prepared and sanctioned—so far, so good—but where is the money to come from? Will this be another Imperial allotment? Bengal, too, is considering the question of having its own agricultural college. Who will pay for it?

All this is to the good of India, and the example set must "egg" other centres on to establish, first agricultural schools (as in India, where the number is to be increased), and later on colleges. We hope, therefore, that all reformers in respect to agricultural methods at present in vogue will study this article in our Calcutta contemporary and similar ones as they appear, for it is necessary to remember that the world is short of food when there is no need for it to be so. Lack of knowledge and insufficient application and interest, which a proper course of training will dispel, are large contributory causes to the world's lack of food and raw materials from the tropics. Let us therefore see that the colleges we need in Ceylon and the West Indies are established without delay, so that these centres at least can come into line with India as regards the efficiency of their system of agricultural education and the resultant increased output of their products.

Tropical Life at the Play.

We do not remember having met Miss Hilda Bayley before; we certainly hope to meet her again, especially in a part that suits both her temperament and her physique so exactly as does the character of Simonetta in "Carnival," at the New Theatre. The play ought to have a good run, and in the time to come one will surely always associate Miss Bayley with that character, as we have grown to associate Hilda Trevelyan with Wendy, Renee Kelly with Judy Abbott, and Doris Keane with La Cavallini. All were fascinating to watch and have proved pleasant to think of afterwards. Workers in the tropics and overseas are often up against a rough time, away on their own and very much alone; on such occasions memories of such plays and the players must be a great help to pull them through periods that are often quite critical in their way, both to the individuals and to the work to be done. It cannot be easy to become a leading actor or actress in the heart of civilization, but at times compensations must come to them if they can but realize how they and their parts can live, time and again, in the hearts of those, whether they were of the "Gods" or of the boxes, when buried away up-country.

As Silvio Steno, Simonetta's great big boy of a husband, Mr. Matheson Lang is of course the "draw" of the evening, but then we knew he would be whilst Miss Bayley was an unknown quantity. Good right through, perhaps they were best at the end; you did not know until they went off to go home in the gondola what his answer would be. He did not perhaps know

himself, and when it came, without any words, it was as delicate as decisive, as was Simonetta's appeal for belief in the story of her butterfly flutter. That is the plot; if you want it filled in, go and see the play.

We thoroughly enjoyed Jesse Lynch Williams' comedy "Why Marry?" at the Comedy Theatre. Having no need to worry over such a query ourselves, we derived much amusement from listening to arguments of others on this knotty question, especially those of Uncle Everett (Mr. Aubrey Smith) who, already married, thought he would be better if semi-detached, only to be last seen skipping for joy because his wife was coming back. Mr. Aubrey Smith took this part to perfection, so did Mr. A. E. George as "John" the very rich husband who, like the husband in "John Glade's Honour," is so buried in his business that his wife feels lonely and neglected. The scene takes place in America, the plot is well laid because it is amusing on the one hand and has an amazing lot of truth in it on the other. If any play that is not a mere frivol can catch on in London this one ought to. Costumiers will not learn much from the dresses unless it is what not to give their clients, but the clothes can be changed if wanted and no doubt they will be later on. The acting needs no change, we found it good right through with perhaps, one exception.

Trade, Politics, and Finance.

Those who claim, and in our opinion rightly claim, that the shortage of coal is the cause of the largest amount of the many ills that life, in all lands, is heir to at the moment, must view with regret the latest Board of Trade figures for the U.K. on the one hand and the further exorbitant rise in prices on the other. Whether, if we sell coal abroad we shall charge any more, the papers do not say. Possibly if Germany, certainly if Austria wants our coal, a large section of people in this country will want to give it to them and claim that they deserve it—as all criminals deserve, nothing but pity and help no matter how much decent folks suffer and have to pay to give this to them.

Meanwhile Germany of course is flourishing. Some of those areas under the eagle-eye of the inspired pressman may not be, but there is such a thing as window-dressing in this world, and if you go to Russia, or discuss Teutonic-Russian affairs with those who have suffered, thanks to Germany, we are sure you would be surprised at the money Germany is spending over there buying up factories, &c., at the price of dirt, whilst playing the destitute and starving game in the shop-front to the Allies. When things settle down, Germany in Russia will support Germany over the border quite easily. Coupled with the help of the hyphenated animal in North America and the widespread organization in South America—which is already organizing buying orders with the German in Europe on a large scale—we certainly look to Germany being on the high road to throw off the effects of the war far more quickly than we show signs of doing; difference in temperament will play a big part in reconstruction, in the war (of economics) after the war (of the rifle and big guns). Temperament has made this country more impractically sentimental than ever, we seem almost inclined to believe that Lenin is right after all. It certainly seems to have made the Prussian more callous and vindictive whilst America is more indifferent and selfish. No wonder the wounds of France continue to bleed and fester, and Italy feels that she is being wronged.

The notice just issued by the Association of Public Wharfingers of the Port of London, that dock, wharf, and warehouse charges will be increased as from May 10th last, to 150 per cent above pre-war rates, will not be pleasant reading to those with produce and merchandise to send to London. Of course we are told that London is done for, which is not true; that such increases are a swindle, a statement with which we sympathize even if we do not approve of, but—we would ask, what of other ports, Liverpool, Marseilles, Southampton and Havre, Lisbon, Hamburg and even New York? Have none of the ports had to put up their rates, how do their landing charges compare with ours? We are quite ready to grumble, but you can do so with far greater benefit if you can prove that other centres are more favourably placed. If grumbling cannot benefit your cause wait until it can. Cure what you can and do not rest until you do so, but endure what you cannot and wait—a day will come, &c., when you will cure it.

This reminds us. Three of our readers have been grizzling over the absence of reliable official statistics of the world's crop-movements. The latest cacao price current issued by Messrs. Theo. Vasmer and Co., with its tables of consumption and production (discussed in the next article), caused two of these criticisms whilst the third arose over Willett and Gray's table of sugar production. It certainly does seem strange that it has been left to private individuals to tell us what the world produces and consumes in the way of the chief foodstuffs and raw materials. When the next International meeting takes place, political or otherwise, this is a matter that could well be discussed, with a view to being put into effect. If each centre helped and agrees to publish its returns promptly, how very much better it would be for everyone; we should then see exactly what we have on the one hand and what we need on the other. We should then know where more of one crop could be produced, and where another centre would be wiser to take up something else to that which it was then producing to excess. If ever we do really start reconstruction work for ourselves, this is a matter that should certainly be placed high up in the list.

The opening remarks in the next article are by no means, unfortunately, confined to cacao, they affect rubber especially, and also copra and vegetable oils and seeds. Nothing can keep down cotton and sugar, but whilst no one seems willing to take up cotton production within the Empire seriously it is well to note that according to information that has come to us viâ the House of Commons, the Bell Spinning Co. of Oldham recently declared a dividend of 533 per cent. What the dividends of the Coats' combine and its subsidiary concerns would work out at on the original capital only an accountant could say. What a pity that these people are not satisfied with a 200 or 250 per cent. dividend and let the rest go to subsidize the efforts of practical men, ex-officers in the Army, &c., trained to produce cotton within the Empire.

Present prices should, in all patience, attract such men as it is, but since it apparently does not, the

prospects should be made more attractive. America, it must be remembered, is producing less and consuming more. It is the same throughout the world taken as a whole (and with sugar as well). But Egypt, Mesopotamia and Uganda with its adjoining territories *could* produce splendid cotton in huge quantities, as India could sugar, which would go a long way to make us independent of America. Wise and widespread investments throughout the Brazilian cotton-belt would soon make Lancashire secure for ever and ever. Of course this is on paper, like our Peace Terms with Germany. More than that it is unwise to say.

"Where can we learn to plant cotton," you may say, and we are asked the same question with various crops, more especially coconuts, for many a man in "civvies" and uniform comes to us for advice; we tell them what we can, and do not even ask their names unless they want to come again. One place to be trained, out of several with which London is vaguely credited with possessing, may be at the Birbeck College off Chancery Lane. In collaboration with the Ministry of Labour, we understand, a special course in Tropical Agriculture has been started for ex-service men at Birbeck College. It will be a six-months' course, and will include chemistry, botany, mechanics, geology and book-keeping. The scheme is being worked jointly with a Committee of the Rubber Growers' Association which has nominated Mr. P. B. Addington, A.C.A., as lecturer in book-keeping. Dr. J. W. Evans, who has had considerable experience in India, will be responsible for geology. We hope coconuts, cacao, cotton, &c., will be added. Good luck to the scheme in any case.

Enough of gossip, let us get on markets. The maximum price of sugar in the "open" market has been raised to 150s., cwt., whilst home refined has been sold at 154s., icing and pulverised at 156s. Against this, West Indian crystallized in the "open or free" market had, up to May 8th, been selling at 131s., to 132s., Jamaica muscovado at 112s. to 115s., White Mauritius and White Java at 148s., American Granulated 149. If these prices cannot stimulate production within the Empire then enterprise among us must be as dead as the prices that existed before the war.

Coming to markets, coffee has been steadier of late until Nairobi realized 125s. to 127s. for good ordinary greenish and Uganda 135s. 6d. to 150s., including peaberry at the latter rate. Some Bukoba (East African) sold at 84s. Against this Mysore went up to 152s. for fine colory, 160s. for good middling, and 153s. 6d. to 163s. for bold common to fine. Common teas tend downwards both Indian and Ceylon. Cotton has had the jumps, finally closing lower at 25d., for fully middling or spot, to 23d. December delivery. Manila hemp is worth £65 to £66—sisal not quoted. With shellac, T.N. is at 570s. but has been done at 540s. Copra runs from £58 to £59 10s. and is rather weak. Coconut oil is at £101 for spot Ceylon but still at £115 spot Cochin. For shipment, Ceylon is quoted £97 10s. and Cochin £102. Copper is at £101 but tends upwards, say to £105 and tin is selling around £295 to £300.

The following is a comparison of the principal points in the returns of the Bank of England at the present time compared with the corresponding week last year:—

May 15.	1920	1919
Bank Bullion ...	£112,518,503	£85,573,632
Reserve of Notes ...	19,129,310	25,976,155
Private Securities ...	80,444,463	77,948,317
Notes in Circulation ...	111,312,935	76,487,085
Rate of Discount ...	7 per cent.	5 per cent.
Price of 2½ % Consols...	48⅝	56⅞
Price of Bar Silver ...	58⅛d.	54d.

The London Cocoa Market.

By the Editor.

There is a slump in cocoa, no one can deny that or explain away the fact. Some have tried but given it up. Such a state of affairs cannot be unexpected after what we said last month, only of course a reaction might have set in and prices gone up instead of going back as with Accras. There are many causes of this and—in England—the raising of the (6 per cent.) Bank Rate to 7 per cent. gave the *coup de grâce*.

All the same the market is not dead, any more than Joe Beckett was after his encounter with Carpentier, as "Billy" Wells discovered the evening before these notes were started. It is well to remember this for the unwary may still be caught. It is difficult now to say what the exact value of Accras is; published accounts leave but little doubt that some buyers (possibly of small parcels) have paid more than others. Thus we were told that sales had been made up to 112s. (for Accras) and almost immediately heard that 105s. was the top price paid, whilst over the first week-end of this month sales were reported at 98s. to 100s. for fair to fermented (ambiguous terms at times like the present); whilst fair for future (end of the year) delivery was quoted at 92s. 6d. ex quay Liverpool, if sales were not actually made on that basis. Only a fortnight before this, Liverpool was selling up to 108s., after that came the break and the drop has been a marked one but I will leave further speech on this subject until the end.

All this time, Trinidads remained steady at 150s. for best marks, good middling to good red 144s. to 148s., that is quite up to last month's levels. The top price last paid for Grenadas is not so high, 128s. to 130s. being the best rates paid, but at these rates the first week in May found the market steady.

What no one seems able to "worm out," is reliable information about Ecuador, its movements and value, and until news does come to hand of some sales it will not be wise to listen to the vague statements that fill the air at times.

With Bahia it is more easy to get news. What you do hear is not inspiriting but reliable. Were this country more dependent on Bahia, such dullness would react on us; as it is it does not seem to make any difference. It is more likely that our Accra prices and its competing influence on the America market has helped to depress Bahias, but that I cannot say for certain. I am told that just now Accras have been further depressed because the cocoa for contracts believed to have been defunct is turning up

just when its absence would be more welcome than its presence. It is difficult to know exactly how we stand to-day because the figures appear so slowly. The consumption in France to the end of April would be welcomed and why not? Even to the end of March would be better than nothing. As it is we have only those for January (3,771 tons, against 2,664 in 1919 and 3,146 tons in 1918).

Talking of consumption our thanks are due to Messrs Theo. Vasmer and Co. for their circular of April 28th. It contains much useful information that is unobtainable elsewhere. Those who want full particulars should write to 66 Fenchurch St., E.C. 3, and ask if a copy of the circular is available.

Of course Germany's consumption is put low, and then only estimated, say 20,000 tons, whilst Austria has 500 tons. In 1912, Germany took into consumption 55,015 and Austria 7,324 tons. On the other hand Holland's (actual) consumption was 36,921 tons, against 24,921 in 1912 and 40,955 in 1915 (its record). Scandinavia took 13,200 tons against 4,300 and Switzerland 18,378 tons which runs fairly evenly back to 10,342 tons in 1912.

On the other hand, whilst the German consumption is so far below its normal level, the table credited the Gold Coast with its full exports 176,000 tons, whereas it would probably have been 120,000 or 125,000 tons according to actual production. In the same way Lagos is down for 27,000 against 15,000 tons had the previous year (1918) been able to export normally. Owing to the abnormally large exports last year, against the equally unusually small shipments in 1918, the total exports of British Colonial came to 242,000 tons against only 118,000 in 1918 and the grand totals are put at:—

	1919 Tons	1918 Tons	1917 Tons
Production ...	457,700	277,300	395,000
Consumption ...	423,300	310,200	310,000

Therefore I would argue, that had last year's shipments been more normal the exports of British Colonial would probably have been about 180,000 tons and in 1918 the same, whilst the grand total of all growths for 1919 would have barely reached 400,000 tons. Against this, with 50,000 tons as Germany's import (instead of 20,000) would have brought the consumption figures (for 1919) to 450,000 or 50,000 tons in excess of the Production. This is where the strength of the market lies. At the moment it is tied down but that does not say that the life is not there, for it is only waiting to be released. It is quite easy to think of the ropes that confine it, and as this or that one is tightened or loosened, so will the market show more or less life. The first rope over here is the 7 per cent Bank Rate, then the endeavours to restrict imports (of cocoa and other things) into France in order to try and improve the value of the franc. Then come reports of unwelcomed increases in the Accra output, a (more than) flat American market with a resultant despondency at Bahia, whose cocoa seems out of favour here, and consequent pressure to sell at comparatively low values. Relative stoppage of sales to Holland and Germany owing to political and social unrest and beyond these—always and ever—short supplies of coal and sugar and outrageously high prices.

My vocabulary of adjectives is exhausted so I will leave this painful subject and discuss movements. Havre has been busy but is not short of cocoa. During April she received 46,015 bags, delivered 45,533, and beside these there were 107,000 bags outside waiting to come in. Here are her figures:—

Havre's Stock, April 30th.

	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará	3,162	415 to 430	1,551	140 to 145
Bahia	14,929	365 ,, 395	42,155	132 ,, 143
Venezuela ...	18,311	410 ,, 500	2,482	148 ,, 180
Trinidads ...	36,868	410 ,, 420	15,673	145 ,, 152
Grenada & O.W.I.	4	385 ,, 400	2,412	140 ,, 150
San Thomé ...	7,761	350 ,, 390	4	135 ,, 142
San Domingo ...	4	350 ,, 360	Nil	128 ,, 138
Haiti	14,114	325 ,, 375	3,886	117 ,, 145
Accras, &c. ...	20,535	333 ,, 348	1	115 ,, 125
Guayaquils ...	17,874	440 ,, 460	2,048	138 ,, 148
Other kinds ...	13,781	—	1,455	—
Totals	...147,343 bags		71,667 bags	

The franc of course is still about half its value a year ago. Bordeaux since the date of the above has gone flat out of sympathy with London and probably by now there has been a break in the above rates.

London also has not gone back in her stock. During the week ending May 8th we received 15,000 bags and delivered 4,000, but before that we received 27,700 bags, and delivered 6,800, so these two alone added 32,000 bags to the London stock, which a week later saw another 12,000 added to the stock which stood as under, on May 15th:—

	1920 Bags	1919 Bags	1918 Bags	1917 Bags
Trinidads	23,780	16,015	13,341	27,733
Grenadas	26,169	7,743	25,187	22,891
Other W.I.	11,784	3,468	8,114	27,766
British African ...	55,616	40,440	49,510	44,651
Portuguese African ...	9,204	4,609	4,214	20,997
Cameroons	1,378	476	4,672	13,245
Ceylon and Java ...	18,444	11,113	22,185	32,617
Guayaquils	31,375	23,387	42,582	63,704
Bahia and Brazil ...	132	986	4,659	11,257
Other foreign ...	20,621	2,905	3,537	8,292
Totals ...	198,503	111,142	178,001	273,153

Coming to the Board of Trade returns, this country shows an unsatisfactory reduction in our deliveries for Home Consumption. If this goes on for a few months on the same ratio as April, what a falling off will there be and if other countries follow our lead, as they claim to be doing over our weakness in prices, then the outlook will be a sorry day for producers.

As a consumer of chocolates, when I get something worth eating, I cannot help suggesting as I have done for months past in the English papers—when deliveries for consumption were mounting up, not going back—that if the makers were not so keen on trying to make the public buy sweets, fondants, and all classes of "fillers," with a mere coating of chocolate over them, consumers would be better pleased, and so would the producers. A veneer of chocolate is but a poor customer for raw cocoa, a few beans go a long way at that game. Besides, as one buyer put it, why buy chocolate-coated sweets at 5s. to 7s. lb., when you can get the sweets without the chocolate at 3s. or even 2s. 8d. lb. in some cases.

With the shortage of cereals, we are told that left

to itself the loaf, as put on the table would be a shilling instead of sixpence as now. Even at sixpence with cakes, puddings and "sweets" at the hotels and restaurants so outrageously dear, many lunchers and diners eat sugar and chocolate confectionery instead, and if educated up to appreciate plain chocolate at a fair price in comparison with the 40s. drop in Accras, the demand should go up with leaps and bounds. It should go up, but it won't as we discuss in the concluding paragraphs.

Coming back to the Board of Trade returns, during April we landed 12,143 tons of all growths (including 8,300 tons of West African), took 3,818 tons into Home Consumption (against 5,667 last year) and exported 3,166 tons, making roughly 7,000 tons delivered in all. For the four months, the figures work out as under:—

Raw cocoa only	Landed Tons	Del'd H.C. Tons	Exported Tons	Stock, April 30th Tons
Jan.-April 1918. ...	9,111 ...	22,629 ...	551 ...	30,100
,, ,, 1919. ...	50,126 ...	22,166 ...	486 ...	48,750
,, ,, 1920. ...	45,096 ...	19,263 ...	13,763 ...	50,345
	Decr. 5,030	Decr. 2,903	Incr. 13,277	Incr. 1,595

On the four months movements therefore, stocks have increased 12,000 tons, though you would not think so if you refer back to p. 14 of our January issue and noting that we were then returned as having 45,050 tons, proceed to work out the figures yourself month by month.

Coming to prices, it is very difficult to give reliable news. Strong holders and weak sellers speak very differently of values for the same grades. In the same way occasional buyers are no doubt paying on a higher level than the big manufacturers, so that when each publishes their rates, or the news leaks out, a considerable divergence in values is apparent. So it came about that at the end of the first week in May, whilst good to fine Accras were spoken of as being worth anything from 95s. to 105s., news leaked out that at least one transaction had been done at 91s. and even less against 108s. but ten or fourteen days before.

Discussing the ex-German plantations in the Cameroons the *London Chamber of Commerce Journal* tells us that they have been informed by the Colonial Office that it has been decided that the German plantations in the British sphere of the Cameroons should be sold by public auction or tender, but that nothing is settled yet as to details; neither are we told what constitutes the British sphere. When it is possible to state when and where the sale will take place adequate notice will be given, but it is not likely to take place before autumn at the earliest. If interested firms wish to send out a representative to view any of the plantations before the sale is announced, there is no reason why they should not do so; but in that case they should first communicate with the Nigerian Government, and it will probably be necessary that their representatives should be provided with camp kit, as accommodation for Europeans at Victoria or Buea is limited. Reports have been received on the condition of some of the plantations. These reports can be seen in the library of the Colonial Office, which will be open for that purpose between the hours of 11 a.m. and 5 p.m. on any week-day except Saturday, or between 11 a.m. and 1 p.m. on Saturadays. It should be understood that these reports relate to the condition of the plantations at the end of 1919, and are not documents the accuracy of which is guaranteed by the Government.

More than one report that I know of has gone out to the papers in our tropical colonies calling attention to the fact that whilst the price of copra and cocoa, to mention but two of our leading crops, have dropped so heavily, every paper over here is warning us to expect much heavier prices for our food, and "gloomy times" are prophesied before the dawn of fair values to the consumer can be expected. The index number (of food costs) stands.

	January	July
1914	— ...	100
1915	118 ...	133
1916	145 ...	161
1917	187 ...	204
1918	206 ...	210

1919		1920	
January	230	January	236
February	235	March	233
July	209	April	235
		May	246

Why is this? Why gloomy? Even with cotton, look at the profits being made at the expense of the consumer and the producer in comparison with the price of raw cotton. Perhaps this is why no confidence is placed in cotton-planting within the Empire by the average man. He may be only average, but he knows that there are limits to his own patience on this high-priced scandal, so probably reckons that others may have the same ideas on the subject and feels that, the day they do, the whole of this unnatural increase inflicted on the public of late, may disappear, and that the planters will suffer whoever will gain by the crash that would follow.

With raw cocoa and copra, however, the situation is worse, Accras to-day cannot be sold—at least readily—at 90s. They were up to 127s. Copra has touched £75 or £75 10s., it is now under £60. Yet we are told that cocoa powder will be dearer, margarine is up (except Maypole), and soap, candles, &c., are all to go dearer. The demand therefore is being kept down by the non-profiteer's housewife to a minimum. Owing to the dearness and scarcity of sugar, cocoa powder was badly handicapped before—but it will be still more so now with sugar at 1s. 2d. to 1s. 6d. lb., and the producer will suffer as the worst that can happen to the consumer is that he must go without. This he is doing already as the Board of Trade figures show.

So it is with copra and coconut products and the producers, as those who have seen the articles in the *Times of Ceylon* will know. I had no idea that their case was so bad. I can only imagine again that with demand over here checked by high prices the producers have been hard hit. "The oil-crushing industry," said the *Times of Ceylon* in mid-April, "seems threatened with extinction." This was due to high freights—but trade in coconut products generally was at a standstill. This is due to the unrest everywhere checking and throwing back demand, just when the big consuming centres expected a boom and had pur-

chased accordingly. All these centres are now sellers especially of raw cocoa and so prices have indeed had the bottom knocked out of them. Why therefore check the demand for the manufactured goods including cotton, by asking present high prices—146 per cent above July 1914—to the consumer. Everybody is suffering severely from this evil, producers and consumers. Two sets only prosper at the cost of the happiness and the prosperity of others, first the Treasury which gets 60 per cent. of the profits and the manufacturers who get the other 40 per cent. Was it in order to get this 60 per cent. that the Bank rate was advanced to 7 per cent. and pressure brought upon holders of produce to liquidate and pay up at the most inconvenient time for everyone but the buyers, i.e., the huge firms and their distributing agents over here. If the drop, say in Accras, of 127s. to 85s., had been passed on to the consumer, of course there would be nothing more to say, but far from a reduction in costs, prices have been put up on cocoa powder, whilst on food generally they have advanced from 136 per cent. above pre-war rates, as they were in January when Accras were 127s., to 146 per cent. above, now that Accras are at 85s., and no one can say when they will stop dropping. It must not be thought that the public do not notice this; they are getting the idea fixed into their minds more and more that the Government, i.e., the Treasury, knows it is benefiting by these high prices which seem altogether unjustified, to such an extent that no relief can be expected for a long time. If this is so, it is as hard on the producers as on the consumers and will tell seriously against the economic development of the resources of the Empire by individual efforts. It will take us back to forced developments pure and simple and that means exploitation and forced labour. Much has been made of the high price of raw cotton. Whatever the price of raw cotton may be, it is not good enough to attract men, who can see how things tend, both here and in the tropics, to plant cotton. So long as the cotton spinners and sewing-cotton makers bleed the public as they must be doing to get their present dividends, so long will it be impossible to get individuals to turn to cotton planting in the tropics and sub-tropics with confidence for future prices.

This may be a diversion in the midst of a cocoa article, but it is well to remember that every dog has his day, and the day when the cocoa planter will get pinched, whilst the public still pay high prices, can still come. It is wise therefore to look ahead.

Coming to the only sales to be given this month, I have to report that small sales have been made of Trinidads at 133s. for mid-red and 140s for good marks. Good Jamaica went at 126s., Summer Arriba 170s. and bold Ceylon 180s. In no instance were the sales large enough to make a market, and if fair West Indian could be pulled down to the present level of Accras (90s. to 85s.) some of the buyers would be far more pleased than surprised. Yet all this time everything with manufactured cocoa in it is tending upwards in price to a degree that is not justified by increased wages and bona fide factory charges. The fact that cocoa is among the lesser sinners on this point does not improve the outlook of the British Colonial planters of this important food-stuff.

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The Proposed International Association to Advance and Safeguard the Interests of the Vegetable Oil Industry.

REFERRING to the above, we have seen an advance proof of the *Margarine Journal* of London (23, Charterhouse Street, E.C.), in which the writer of the Overseas Notes has appealed much more emphatically even than has been done in the columns of this journal for an Association on the lines suggested in the heading to this column. Here is an abstract of what was said. Briefly put, the context discusses the inferior makes of margarine that occasionally make their appearance to secure present high values on the basis set by the really good makes, and then when that trade is spoiled, possibly with their help, the firms making these common grades will disappear and turn up again later on under another name, and do the same with chocolates or other goods also in strong demand—for a good article—at high prices. At present, whilst the chocolate trade is not altogether free from such pests, often from foreign shores, it would seem as if the magarine industry was troubled with more than one specimen born and reared on this side. This is what the Overseas man had to say, speaking of an interview he had had with a producer of and dealer in oils for margarine and soap, who had just got back after a two years' run-round over the face of the earth arranging for oil supplies, and who had, on his return, found good oils difficult to sell and unsatisfactory margarine easy to buy. The quality today was adversely compared with that of two or three years ago. "I tell you," the wanderer said, "that we have come to a critical period of the margarine trade in England, and I, having been away for a spell, know and notice this perhaps more than you do. As I told you and others long ago, only no one seems to have followed my advice, if the Ceylon Association, the Indian Government, or an Indian Vegetable Oil Association, the people up at Liverpool (connected with West Africa) and others who have good oil to sell or the wherewithal from which good oil can be made, would, either jointly or separately, advertise their oil for sale and the names of the margarine makers who buy it, then the confidence of the public would be maintained. If something of the sort is not done the demand will fall off and the public go back to butter, which, if twice as dear, goes twice as far with care, and needs no vegetable oil in it. In that case vegetable oils will suffer, and so will those trades which supply us with machinery and the farmers with cake. The rubber growers have not only formed an Association,

but are offering prizes to increase the demand for rubber. Indian tea growers, realizing what America and elsewhere have in the way of money to burn, are anxious to push the very best teas over there at any price, so that the taste for it will remain and give that growth an enduring reputation. Margarine seems doing the opposite, at least some makes are, and this is where they have come to the parting of the ways. If margarine in England takes the wrong turning now, unless we have another war with Germany—which Heaven forbid just yet—the chance to get back into public favour will never come again in their day."

The *Margarine Journal* had a good deal more to say, but that can be studied in the original. We have, however, reproduced sufficient here to show producers and exporters how 50 per cent. of the world demand for vegetable oils can be spoiled unless they co-operate and work to keep up the standard of the margarine made, not so much by prosecuting the makers of the bad brands, as by advertising and letting the public know who makes the good ones. To do this an International Association must be formed, and the sooner a start is made the better.

Cotton and Imperial Development.

THOSE anxious to try their luck—and help develop the resources of the Empire at the same time—by taking up the cultivation of the best types of cotton, should not forget the Federation of British Industries at 39, St. James' Street, S.W. 1 (sometimes known as Norwich Union Building), where St. James' Street and Piccadilly meet. The Federation is doing its best to enable the willing man to make good. Their intelligence department is replete with the means to do so, practical experts backed up by books, reports and samples. The department also issues handbooks of its own as, for instance, a recent one on "Cotton" by Mr. N. M. Penzer, B.A., &c., to which Lord Milner has contributed a Foreword, in which he takes rather a pessimistic view of our rate of progress, for he claims that "it needed the late war to awake us to the great importance and potentialities of our Colonies." If the Colonial Office had only evinced some interest in TROPICAL LIFE and its efforts, ten years before the great war started, to awaken the interest of the non-Colonial Britishers to the importance of the Colonies, Lord Milner would not have had to find fault as he does in this sentence both with the Colonial Office over which he now presides, as well as with the public for being so indifferent to the value of their Imperial heritage. The day that Lord Milner and the Colonial Office are willing to help us help them, some progress will be made, but left to themselves, no Government Department and no Government controlled merchant adventure will do much if any good in the way of developing our Imperial resources. Of course no Government official, especially those of the lower ranks, can afford to own that he is not the leading expert in his work, even if he has only been at it for weeks or months, against the years of the non-official, and until this is changed and papers like ourselves are called in to help, no progress can be looked for. "Practically all the Colonies under direct Imperial control are, from a European point of view, backward countries." This is straight talk, let us hope that under Lord Milner's forceful temperament a change for the better will be visible. It will not so long as outside help is not called in.

Those however who want to make a start, will be glad to come across Mr. Penzer's book, it costs only 2s. 6d. with a paper cover or 5s. with a stiff binding. It is full of statistics. The bibliography at the end contains some 300 works on the subject arranged according to dates from 1881 to 1919. Such a list is most useful to have handy.

Rubber Notes.

ACCORDING to recent statistics, Malaya, at the end of 1918, had 596,731 acres under cultivation, or an increase of 8,411 acres over 1917. The returns for last year should now be available, when it will be interesting to compare the more important items with those in the previous returns, say: approximate areas under the most general kinds of cultivation were as follows:—

	Acres
Rubber	342,330
Coconuts	40,684
Coffee	8,275
Padi	7,426
Various	16,522

Rubber and coconuts both show a falling off compared with 1917, while coffee and padi have increased considerably.

Congratulations to the Father of the Rubber Industry, not so much because he is Sir Henry Alexander Wickham, as that the knighthood bestowed upon him shows some appreciation of what the whole world owes to that veteran for what he did for the modern rubber manufacturing industry. Although no chicken, his robust constitution makes us still hope that Sir Henry Wickham will long have the pleasure of enjoying this mark of appreciation of his work which he so thoroughly deserves and which we, without doubt, are so pleased to give. As the writer of a letter in the *Financer* some little time ago said, "If it had not been for our spirit of enterprise and courage, the world would be paying 40s. per lb. for Brazil's rubber." This is no exaggeration, but since the world owes it to the pluck of the planters that we are now enjoying rubber at 2s. per lb. instead of £2, still more does it owe it to the father of the industry that things are as they are, and the world is enjoying the blessing of cheap raw rubber—(which is more than can be said of the planters) in ample and assured supplies.

J. S. G. has a timely article in *The India Rubber Journal* for June 5, page 21, on the present cost of opening rubber estates compared with pre-war days. Here is the table given showing the comparison in plain figures:—

	Pre-War Estimates		Post-War Estimates
Cost of land per acre, say ...	$25*	...	$50*
Felling	8		
Burning	25	...	60
Clearing	4		
Lining	1		
Holing	1	...	5
Planting	1	...	2
Drains	3	...	7
Roads	1	...	2
Nurseries	1	...	2
	70		128

* Take the $ at 2s. 4d.

This, we are told, represents an initial cost of nearly £15 per acre at the present time, as against £8 in pre-war days, and does not allow for manuring, weeding, general cultivation, &c. Further, it must be borne in mind that tapping does not commence under the best circumstances until the trees are five years old, and it is during the time between planting and tapping that the large increase in cost is apparent.

The Rubber Growers' Association, perhaps thinking of the letter that "A Trew-Genius" contributed to our columns last July, are still offering £5,000 as prizes, in the form of a competition for ideas and suggestions for extending the present uses or for encouraging new uses of rubber and ask us to remind our readers that there is ample time to come in and win. This amount will, as the following terms show, be considerably cut up so that it still cannot pretend to follow "Trew Genius'" idea of giving free-play to the spur of the speculative element that is so latent in any of us, man or woman, that have any "go" in us worthy of the name. Having once published the conditions for over a year it would of course be troublesome, if not impossible, to alter the terms now.

Unfortunately we have not room to include the rather long but quite reasonable list of conditions attached to the offer. Those wishing for these must communicate direct with the Secretary of the R. G. A., at 38, Eastcheap, London, E.C. 3, for a copy, until such time as the committee of that body see fit to *advertise* their conditions, which publicity such a competition deserves to be favoured with, as at the present price of paper we cannot give up an entire page to the matter, much as we would like to have done so. Here are the particulars showing how the prize money will be divided.

The Rubber Growers' Association (Incorporated) offer the following awards amounting to £5,000 in all, for ideas and suggestions for extending the present uses or for encouraging new uses of Rubber:—

One prize of £1000.

Three prizes of £500 each.

Ten prizes of £100 each.

A sum not exceeding £1,500 to be divided amongst the remaining competitors whose suggestions are considered to be of value, according to the relative value of their suggestions, but so that no competitor will receive more than £100.

Suggestions must be practical and likely to increase the demand for the raw material. Ideas will be welcomed for the application in new directions of existing processes, methods or manufactures, or for improvements or new processes which will facilitate or cheapen the production of rubber goods.

Competent judges (technical and otherwise) will be appointed to investigate and adjudicate upon the suggestions received.

Among the conditions are the following with their numbers attached:—

1.—Special value will be attached to suggestions of a thoroughly practical nature, supported by reasons and detailed information likely to make them effective.

2.—The relative value of suggestions which are deemed practical will depend upon the quantity of raw rubber their adoption would absorb, and special consideration will be given to practical suggestions likely to utilise rubber in large quantities.

5.—Each suggestion to bear a *nom de plume* or number, which should be placed upon the right hand corner of each page used. Particulars should be clearly and legibly written or typewritten on one side of the paper only.

10.—The closing date for receiving suggestions from competitors is December 31, 1920. Envelopes will not be opened before this date.

11—Suggestions should be addressed to The Rubber Growers' Association Prize Competition, c/o Messrs. Fitzpatrick, Graham & Co., Chartered Accountants, 95A, Chancery Lane, London, W.C. 2.

N.B.—All enquiries in connection with the Competition (other than the competitive suggestions) should be addressed to The Rubber Growers' Association (Dept. C.) 38, Eastcheap, London, E.C. 3.

Well, good luck to all concerned; the competitors and the planters to be benefited especially. This reminds us that at the time (last July) when we published "Trew-Genius'" letter already referred to, it received a good deal of attention, the *Planters' Chronicle* of Bangalore, being among those who commented on it and supported the elastic award according to merit based on the extra amount of rubber consumed. *Grenier's Rubber News* also found the suggestion had a good deal of merit it, and the same as the *Planters' Chronicle*, reprinted the letter in full. All the same the prizes in this instance are fixed, so it is up to anyone and everyone to come in and have a try. We sincerely hope the winners will deserve their prizes to the full satisfaction of the judges, because then we shall feel that the consumption of rubber will be likely to take on a big and lasting increase.

When we get our Agricultural Colleges in Ceylon and in Trinidad (or Jamaica) in the West Indies, then we can look for a true genius or more than one, to be developed to teach us how to use rubber by the ton where we now only need a cwt. According to the latest news, published in the *West India Committee Circular*, Trinidad, like Jamaica did, has offered £50,000 for, we are told that, following the unanimous adoption of resolutions by the Trinidad Agricultural Society and Chamber of Commerce in favour of the report of the Tropical Agricultural College Committee which was published in the *W.I.C.C.* of March 4th last, the Legislative Council of Trinidad and Tobago on April 9th agreed to the following resolution, which was moved by the Hon. A. H. Cipriani, O.B.E., and seconded by the Hon. W. G. Kay:—

"That the Council approves the recommendation of the Committee appointed to consider the desirability of establishing a Tropical Agricultural College in the West Indies, that such a College be established in Trinidad, and recommends that the initial sum of £50,000 required for its establishment be raised by a tax on agricultural produce during the years 1921 and 1922."

The tax advocated by the Agricultural Society is 4d. per 100 lb. on cacao, 2s. 3d. per 1,000 lb. on sugar, 1s. per 1,000 on coconuts, and 3s. per 1,000 lb. on copra.

It now remains to secure the necessary contributions for the maintenance of the proposed college, which it will be remembered it was proposed should be raised by annual contributions from the participating colonies.

Coming now to prices, rubber, like coconut oil, does not seem to consider that it is being treated with the respect that is its due in comparison with other crops; this is especially the case with rubber. At the beginning of June—say on the 3rd—when Singapore was quoting (according to Messrs. Lloyd, Matheson and Carritt) 83 cents. (2s. $1\frac{3}{4}$d. equivalent in London) for standard crepe and 81 cents. (2s. 1d.) for sheet. London's spot quotations were:—

	June 3rd, 1920.	May 27th, 1920.	June 5th, 1919.
	s. d.	s. d.	s. d.
Smoked Sheet (F.A.Q.) ...	2 1	1 $11\frac{3}{4}$	1 $8\frac{3}{4}$
Crepe (Standard Quality)	2 $1\frac{1}{4}$	2 $0\frac{1}{4}$	1 $9\frac{3}{4}$
Para...	2 $1\frac{1}{2}$	2 $1\frac{1}{2}$	2 $5\frac{1}{4}$

Whilst a week later, on June 10th, quotations ran rather less, with a tendency to go back to the higher level. Singapore was also lower at 78 cents. (2s. $0\frac{1}{2}$d.) and 77 cents. (2s. 1b.) for crepe and sheet.

	June 10th, 1920.	June 3rd, 1920.	June 12th, 1919.
	s. d.	s. d.	s. d.
Smoked Sheet (F.A.Q.) ...	1 $11\frac{1}{4}$	2 1	1 8
Crepe (Standard Quality)	1 $11\frac{3}{4}$	2 $1\frac{1}{4}$	1 9
Para...	2 1	2 $1\frac{1}{2}$	2 5

Forward Positions—	Smoked Sheet.	Crepe.
	s. d.	s. d.
1920, June	1 $11\frac{1}{2}$	2 0
,, July to September ...	2 $0\frac{1}{2}$	2 1
,, October to December	2 2	2 $2\frac{1}{2}$
1921, January to June ...	2 $3\frac{1}{2}$	2 $3\frac{3}{4}$

Stocks—	June 5th, 1920.	June 1st, 1919.
Plantation, London ...	20,021 tons.	22,957 tons.
Para, Liverpool	June 1st, 1920. 1,200 tons.	1,000 ,,
	Total 21,221 tons.	Total 23,957 tons.

Now we come to a matter that is far from attractive and in fact one that has hit us very hard, for it is many years since we first communicated with Mr. J. P. Wileman and started to study his paper. Students like ourselves, of Rubber or any other notes in *Wileman's Brazilian Review*, must have learnt with genuine regret of the death of the Founder and Editor of this useful weekly. Mr. Wileman, who was born in Uttoxeter in 1853, leaves a son, Mr. H. F. Wileman, who has taken over the direction of the *Review*, and assumed responsibility for its publication. We sympathize with him on his loss, and trust that under his guidance the *Review* will continue to prosper.

Seedling Canes in Northern India.

BULLETIN No. 94, recently issued by the Agricultural Research Institute, Pusa, has a lengthy title, viz., "A Preliminary Note on the Behaviour in North India of the First Batch of Sugarcane Seedlings distributed from the Sugarcane-breeding Station, Coimbatore." Its author is Mr. T. S. Venkatraman, B.A., acting Government Sugarcane Expert at Madras, in place, we take it, of Dr. C. A. Barber recently retired.

Surely it would have been far better to have given the bulletin the short title of "Seedling sugarcanes in Northern India," and then put in as a sub-title whatever was felt necessary to give further information concerning the contents.

It may be remembered that in the notice of Prof. Harrison as "Our Friend," last February, tribute was paid to the part he played in introducing seedling-canes to the sugar producing world and those who know the history of cane-planting in the West Indies during the past thirty years should compare what we are told in this bulletin with what is said in those publications throughout the West Indies which show what can and what has been done with seedling *v.* planted canes. When doing so, remember that our correspondent in Peru, Mr. C. L. Rayle (formerly of India) urged that for sugar production to be carried on at its best, the fields and factories must be located in tropical India, not in the northern part where the climate is against the growing of good cane. The experimental work discussed in the bulletin under review has been done in Northern India. Success therefore will be all the more creditable to Dr. Barber, Mr. Venkatraman and others when achieved up there. We hope and believe they will attain it.

The price of the bulletin is As. 8, say one shilling or thirteen pence, post free. Messrs. W. Thacker and Co., of 2, Creed Lane, E.C.4, London, probably have a supply or could say where copies can be obtained.

The *International Sugar Journal* of London are running a useful series of articles on "The Growth of the Sugar Cane" by Dr. Barber (see their issues of Oct., Nov., Dec., 1919, and now in the Feb. and later issues). The last one discusses the work done by Mr. Somers Taylor with cane also in Northern India. The illustrations accompanying the notes form a very welcome addition.

The efforts being made at Kelham in Nottingham and Cantley in Norfolk to establish beet-sugar farms and factories over here are also discussed in the *I.S.J.*, whilst the *Indian Planters' Gazette* of April 3rd discusses "Cattle-breeding in India." It has been shown by published reports that sugar-beet production around Magdeburg and elsewhere in Germany doubled the value of the land besides giving the very substantial profits that even pre-war prices put into the pockets of our ex-enemies. The shredded residue, one can hardly call it cake, is an excellent cattle food, more nourishing, we understand, than some if not all of the usual roots that are fed to them. In face of this, one cannot help wondering whether substantial areas throughout India could not be planted with sugar-beet for conversion into sugar. At Kelham, we believe a four-year-old rotation crop is to be the rule, 6,000 to 8,000 acres of beets to be produced each year. All this is to be done by the farmers and other land-owners. Surely many centres in India could do the same and the government and millionaires in India could become shareholders as well as the farmers as the latter begin to accumulate capital out of their crops. In face of the wealth that sugar-beets brought Germany before the war, realise what it could do, if the proposal is practical, in India with sugar (cane or beet) at so many times, ten times, its pre-war price, as in the open market the *maximum* price is over £150 a ton and home refined £154.

ACCORDING to the official returns, fifteen estates in Trinidad, B.W.I., with 72,700 acres under sugar, produced only 47,706 tons in 1919. One wonders what area was actually "cropped" to bring about this output.

The Development of Brazil's Resources.

Industrial Expansion in Parahyba.

One of our earliest supporters, Mr. Walter Holdsworth, who has always been keen on fibres, recently returned from Brazil where he has been discussing development problems, connected we believe with vegetable oil as well as fibre. About the same time that he returned, Messrs. Logan and Co. sent us an extract from the Parahyba paper, the *Uniao*, for April 30th, in which reference is made to our friend and his work which, rather freely translated, reads as under: Dr. Cammillo de Hollanda, Governor of the State of Parahyba, on April 28th received in special audience Mr. Walter Holdsworth, the expert in tropical agriculture, especially vegetable oils and fibres. Mr. Holdsworth is also the intelligent emissary of English financial interests, and has come to Brazil on a special mission to open up new industries in Brazil, for the mutual benefit of both countries. Mr. Holdsworth obtained permission from the British Government to allow capital to leave England for investment in Brazil, and so help still further to open up our commercial relations with that country. In connection with this work we hear that he recently purchased a large property in the district of Mamanguape, where he intends to develop an industry in coconuts, copra and fibres in general, and also in the extraction of vegetable oils. This is a very good piece of news for our readers, since the arrival of foreign capital in our country can greatly push forward our industries, and so enrich and thus increase the progress of Brazil's development.

The putting up of the proposed copra factories will greatly increase the value of our present coconut plantations as well as the value of unplanted land suitable for coconut growing. Parahyba is rich in such areas where the coconut tree does and will do splendidly. In this way the State may rival even the Polynesian industry, not only as regards the quality of the nuts, but also as being nearer to the European and American markets. The fibre of our nuts can be used in multitude of industrial uses, whilst, as everyone knows, the oil is used in making artificial butter, known as margarine, and has a very large sale on a price basis which should give a magnificent return as regards profits to the careful investor. Mr. Holdsworth therefore promises to become one of our strongest economic supports as regards this new industry, which should prove to be one with great future prospects, and we wish him and his friends every success.

Mr. Albert Howard at the Royal Society of Arts.

We were glad to hear the genuine admiration shown by various leaders in Anglo-Indian affairs who took part in the debate that followed Mr. Albert Howard's paper, of the work that Mr. and Mrs. Howard have done at Pusa since they first went there. The easy way in which these somewhat reticent men let slip time and again such a term as "the Howards of Pusa," betokens how indelibly the two "wizards," as Lord Henry Bentinck described them in the House of Commons, and the Research Institute at Pusa have come to be considered as part and parcel of each other. It is true that a break is now to be made, but the new work to be undertaken by this well-known pair of scientists will be all the more successful and useful because of the very sure foundations leading up to it that Mr. and Mrs. Howard have laid at the Pusa Institute.

Later on we hope, when the full report of the meeting and its debate is received, to come back again to Mr. Howard's paper which he delivered on May 31st at the Royal Society of Arts, on Crop Production of India. Sir Claude Hill, Dr. Voelcker, Mr. Beresford the irrigation engineer, and others took part in the debate, whilst in the paper itself so much ground was covered that we can but record the fact in this number. The Society of Arts awarded their medal to Mr. Howard for this paper.

Mr. A. W. Knapp's book "Cocoa and Chocolate, their History from Plantation to Consumer," which is being published by Messrs. Chapman and Hall, is expected to be ready early in July. The price will be 12s. 6d. for a handsome volume ($5\frac{1}{2}$in. by $8\frac{3}{4}$in.) containing 100 illustrations.

Although there are several excellent scientific works dealing in a detailed manner with the cacao bean and its products from the various view points of the technician, there are those who consider that no comprehensive modern work has, as yet, been written for the general reader. Until that appears, Mr. Knapp's book will from all accounts cover lightly but accurately the whole ground, and so include the history of cacao as well as its cultivation and manufacture.

Mr. Roland Belfort, editor of the *Financial Empire*, is publishing a book, "Our Bankrupt Railways." But why bankrupt? So long as they can bleed the public, both as passengers and freight suppliers, they will not go bankrupt, but we will not quarrel over the title.

The present chaotic state of our railways, claims Mr. Belfort, is due to many preventable causes, which the author traces and explains. Notably, the fatal *amateurism* of the Directors; their General Managers' wasteful, competitive methods; the despairing apathy of the shareholders and the greedy policy pursued by Bolshevistic agitators and their credulous dupes. Finally, the author points out how effectively the despoiled shareholders can protect themselves from further anxiety and loss. In this work, which is destined to create considerable discussion in Railway, Labour, Industrial and Financial circles, the entire Railway position has been, as it were, bovrilised, and presented in concise, attractive style as it stands to-day, and as it ought to develop in the future. There is no exaggeration in saying that no man—or woman—interested in our Railways can afford to miss this leading Railway expert's impartial, moderate and sympathetic study of the most vital problem now confronting this country.

The book will be split up into fourteen chapters, and cost 6s. net, postage extra. It will be an interesting book to study, especially as there is a piquant decisiveness, *Sauce Tartare à la Belfort*, about this critic's writing, that will go well with such a dish as "grilled Railway Directors."

Glass-making in India.

BY a recent post came a note from India, with an extract from the *United Provinces Journal* giving us news of a considerable impetus to the manufacture of glass in India, so that it may be said that less than half the quantity formerly imported from abroad now goes into that country. "The point we would like to emphasize," the *U.P.J.* went on to say, "is that there is a large demand for glassware in India. The success of local factories has shown that it is possible to manufacture good glass in India, and that there is a big field for those who are willing to give time and money, skill and brains to build up this industry." We, of course, in Section VI, Chapter XX, of "How to Pay for the War," strongely urge the introduction and establishment in India of extensive glass-grinding and polishing works, if not factories to manufacture glass itself. "Millions of capital," it is pointed out on p. 131, "must be invested from start to finish, in one form or another, in the German-controlled industry of optical goods, microscopes, telescopes, field-glasses, &c. (in the U.S.A.), as those who are used to handling the goods in bulk can tell you. . . . And this brings me to India, for our Eastern Empire could do valuable work in the cutting, grinding and polishing of optical goods, as it offers a class of work which is very suitable for a large proportion of her millions of patient, plodding, industrious and painstaking people, who will need help to pay their share of the cost of the war." The article from which this paragraph is taken originally appeared in the *Mysore Economic Journal* early in 1918, probably their January issue, so now that the *United Provinces Journal* tells us that the war has "bucked-up" the matter, let us hope it will not go flat again, but become, both the manufacture of glass and the making of high-class optical goods, a leading industry over there, worthy of the wealthy and working-classes alike, to whom we look for the continuation of good work already started.

THOSE with enough energy and enterprise left to make them anxious to go abroad and develop the resources of the Empire, will do well to set up and realise the heavy drag that the present cost of labour in this country will be upon men of small means for many years to come. In order that the lower and lowest class of labour, including bus and tram conductors, can "loaf" through life living on the wealth developed by others instead of going abroad to increase the national wealth themselves, those who are not content to do so are having to pay heavily for this class of unproductive and overpaid labour. *The Leader* of Nairobi realising what was coming called attention to one item only, viz., the Income Tax, and published the following table to show how the small man scores abroad compared with those whose income is no larger on this side. Since this table was drawn up, the Chancellor of the Exchequer has further humoured the working classes by exempting those whose income is £250 or less from having to pay any income tax. This of course will change the figures in the fourth column but (except in the case of organized labour) the man with £500 a year or less will find his rent and other burdens have been increased on the whole whatever relief is afforded in the single item of Income Tax. Comparative rates of payment for Income tax in the following countries:—

Income	B. E. Africa	Victoria	S. Africa	Great Britain
£	£	£	£	£
250	1 0 0	1 5 0	Nil	14 12 6
500	8 5 0	4 7 6	10 1 8	45 0 0
1000	18 0 0	18 15 0	36 0 0	93 15 0
1500	37 10 0	31 5 0	63 0 0	281 5 0

Educated and trained labour therefore, knowing this, should be more willing than ever to leave the two ex-war profiteers, capitalists and labour to their own devices on this side and go to more congenial centres to continue doing their bit to help win the peace as they have done to win the war.

WE have had the pleasure of receiving a letter from Mr. Arthur Abbott, "Our Friend" for December, 1918, which reminds us that it is just a year since he took over the duties of British Consul at Sao Paulo, having received the appointment in June, 1919, when he retired from the secretaryship of the Rio (British) Chamber of Commerce to do so. With Mr. Abbott's former experience in the European Consular Service, we are sure that he will be the right man in the right place as H.M. Consul in a cosmopolitan place like Sao Paulo. We wish "Our Friend" the best of luck, and also wish British trade interests every success under his fostering charge.

"We have an excellent Chamber of Commerce in the British Chamber of Sao Paulo and Southern Brazil, with Mr. E. Lloyd Rolfe as the secretary," Mr. Abbott wrote. "As the secretary is full of enterprise and very pushing, the Chamber is developing very rapidly." Mr. Abbott, fresh from the charge of the British Chamber at Rio *plus* Mr. Rolfe at Sao Paulo, promises well for those who need their help out there.

THE last issue of the *International Review* of the Institute of Agriculture at Rome, Year X, No. 2, the publication of which was delayed for over two months, includes an abstract of a note in *L'Italia agricola* on the use of "Coffee Dregs as a Food for Stock." Signor E. Aruch, the writer, claims, it would appear, that the composition of coffee dregs compares well with that of maize, coarse bran, oats and rice bran ("puladi riso"). Two samples of dregs from the second infusion analysed by him gave the following percentages: water, 9·45, 11·42; fat, 11·64, 12·45; nitrogen, 11·68, 11·5; caffeine, traces; starch, 17·00, 22·47; sugar, traces; ash, 1·71, 2·03; nitrogen-free extract (2nd sample), 14·81; fibre (2nd sample), 25·30.

The author fed coffee dregs to dairy cows, beef steers, horses, rabbits, guinea-pigs, chickens and ducks. The food proved excellent for all the animals when fed powdered (not in grains) and very dry. A cow may consume 2·2 lb. per day, a beef steer 3·3 lb., a horse may receive 1·7 lb., but it is best not to give it more than 0·8 lb. The dregs are particularly well suited to cows, they favour milk production and improve the composition; and pigs, which best digest the fat of the dregs.

Palm Products.

The Journal of the London Chamber of Commerce when discussing Zanzibar and its commerce, told us recently that over there coconut cultivation ranks in importance next to that of cloves. It is estimated that there are about 48,000 acres under coconuts in the two islands (Zanzibar and Pemba). Only a few large plantations are systematically laid out, but most clove properties include irregular coconut plantings, and in the majority of cases there are considerable areas of undeveloped land suitable for coconuts. Many native villages are situated in the middle of coconut groves.

The quality of the copra compares unfavourably with that of Cochin or Ceylon. Much is produced by the small grower or trader, neither of whom possesses proper drying facilities. The former generally smoke-dries over a fire as with Tapaham drying in the Philippines, see "Coconuts—the Consols of the East," a blackened and inferior product resulting. The latter often sun-dries his kernels in dirty places and sells the copra half-dried with a view to deriving an advantage from the greater weight. These faults are remediable, and copra produced on the Government plantations has been most favourably reported on by London brokers. The exports of copra produced in the Protectorate were 3,182 tons in 1918, as compared with 6,583 tons in 1917.

It is interesting to note also that the manufacture of soap was started in Zanzibar about fourteen years ago. Previously all the blue and brown mottled soap used for washing clothes was imported from Marseilles and Hamburg. There are now two factories, each turning out about 60,000 lb. of soap a month we are told, which is not only used locally, but exported to Madagascar and to the mainland. In addition to these two factories, which express their own coconut oil for making soap, there are four other smaller oil mills in which coconut oil and sim-sim oil are expressed. In former times the oil was expressed by primative native presses worked by camels; there are only two of these mills still in existence.

The *Financier* has emerged from the war in triumph with its well-known red-covered Rubber Share Handbook, sixteenth edition for 1919. This edition includes details of the companies owning estates growing rubber, coconut and other produce in Ceylon, Malaya, Southern India and the East generally, also some in South America. The cost has been kept low at 6s. net, which is truly wonderful when one remembers that the coming edition of "Who's Who" is to cost 42s. Mr. E. L. Killick, who contributes the Preface to this edition, and those who have been associated with him in bringing out this book, are to be congratulated on the results of their efforts. A word to the wise is incorporated in the Preface, which word holds as good to-day as when written probably two years ago nearly. The fact that Labour in the House of Commons wanted to fleece the planter when he has made good, but is in no hurry to help finance him to do so—and, incidentally, to supply the said Labour with that raw material without which many industries over here would cease—shows how successful have been the efforts of experienced and careful men to help develop this section of the resources of the Empire.

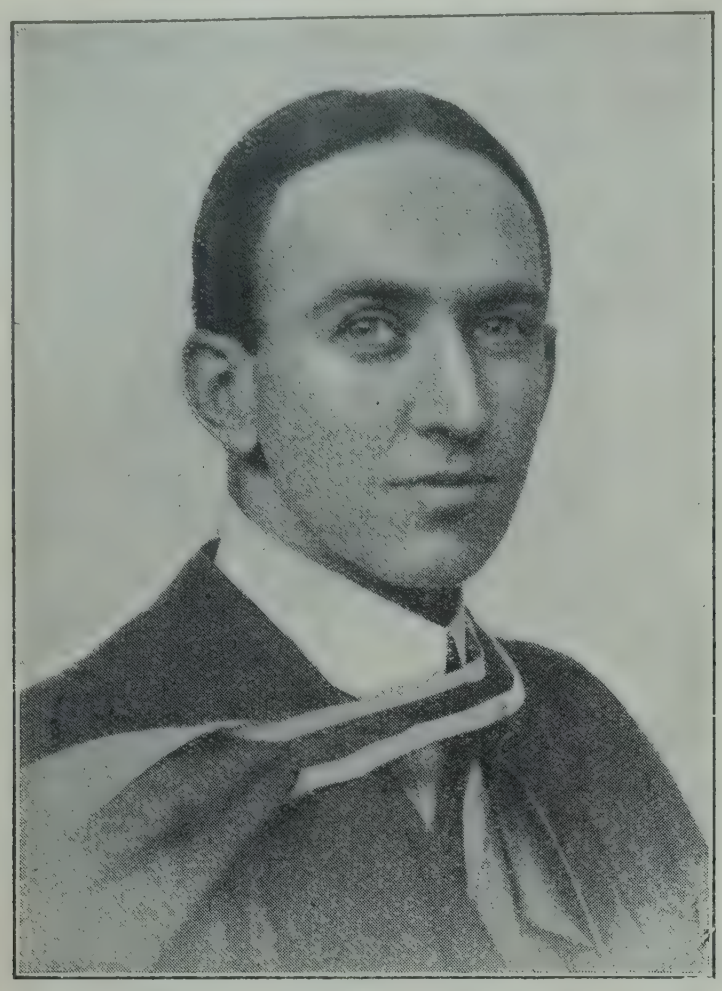
Malay and Java on the Concert Boards.

From across the Atlantic come reports of a new form of publicity for the Tropics, one too that cannot fail to reach the brains and minds of many who otherwise would never be interested in those supplies of most things that make life bearable and possible in these days. We refer to Eva Gauthier, the singer about whom the American papers have much to say, especially concerning her interpretation of Javanese and Malaysian folk tunes. All this is to the good; the more that the attention of the public is attracted to the Tropics, the better both for the Tropics and the public. So Mdlle. Gauthier is benefiting us all, for the attention of the public to her well-attended concerts will return, boomerang-like, to them and bring with it many advantages whilst doing so.

This is what Mr. Parker said of the artiste in the *Transcript:* "Mdlle. Gauthier first sang three or four of the Javanese and Malaysian folk-pieces gathered during a visit to those Asiatic coasts and by the favour bestowed upon her by no less a native potentate than the Sultan of Jolo. He had reason for his grant of goodwill. To sing them, Mdlle Gauthier assumed Malaysian semblance. With an animation of mind, a clearness of speech and a personal charm quickly touching her hearers, she conversed with them about Javanese and Malaysian folk-way and folk-music." We wish Mdlle. Eva Gauthier success, all the success she deserves, which seems to be much, judging by the long favourable reviews she has drawn from leading musical authorities. Having led the way with Java and Malaya, we hope that others will follow her lead *re* Latin-America, *the* home of pure romance, and elsewhere. There is plenty of opportunity, let us hope there will be plenty of such singers.

Continued from. p. 88.

Mr. Porritt had to part company with his North British friends but only partially so as the work on which he is engaged here in London will still be to their benefit as to that of all British tyre manufacturers. Indeed we believe that "Our Friend" considers that the ease with which the company allowed him to relinquish his post, must be attributed to the fact that Mr. Alexander Johnson, J.P., Managing Director of the North British Company, has great faith in the need and possibilities of scientific research both with regard to the present, as well as to the future development of the rubber industry and so, realizing the value of Dr. Porritt as chief of the Central Research Laboratory, he allowed him to go from those connected with his own works in Edinburgh and elsewhere. The future welfare of his own firm and of the British Tyre industry generally will give back to Mr. Johnston more than he has lost. The future work of the Research Association will, apparently, consist in investigating the fundamental problems incidental to the general manufacture of rubber, and with the help of the research chemist to try and eliminate or rectify those perplexing troubles which at present harass the managers and check demand or cause complaints which are difficult to remedy. By research, radical improvements can be introduced, and new uses for rubber goods discovered. Good luck, therefore, to the Association and to its Director.



By courtesy of "The Rubber Age."

"Tropical Life" Friend.—No. 180.

Mr. B. D. PORRITT, M.Sc., F.I.C.

Director, Research Association of British Rubber and Tyre Manufacturers.

WE are glad to see how the rubber papers of all shades of economic politics have come forward to pay tribute to the above Association on their choice of, and on their being able to secure Mr. Porritt as their Director of Research. We believe that in Mr. Porritt they and the English Rubber Trade generally have the right man. With the training behind him and his work as chief chemist in one of the best practical schools in connection with tyre construction, viz. the North British Rubber Company of Edinburgh, Mr. Porritt can bring just the knowledge, practical as well as theoretical, that we want. He will know when proposals can hamper trade and so must be modified, and when, should he have recommendations to make to the assured advantage of the tyre trade, he must ask them to support him in his decisions.

If any of our readers want to say that they do not know about "Our Friend," we would suggest that they turn up their file of TROPICAL LIFE for last year until they come to the March and April numbers, for in them, as the leading articles, they will find much of what Mr. Porritt had to tell us at the Royal Society of Arts on "The Rubber Industry—Past and Present." We know that these two issues enjoyed an especially good circulation largely because of these leaders, so there can be no doubt the lecture itself in the original has been carefully studied and digested by all classes of rubber men from producers to consumers.

Like ourselves, Mr. Porritt started his education at the Whitgift Grammar School in Croydon, an institution which dates back to about Queen Elizabeth's time or some such date, although it was only about 1872 that the main building of the much enlarged modern school was erected. There are glorious playgrounds behind in the midst of the heavily-populated town centre that are already and always have been very pleasant to wander through, and which make you wonder how they will contrast with the probably much more "Londony" state of the town in fifty and a hundred years time.

Unlike ourselves Mr. Porritt had the advantage of passing on from the Whitgift to University College, London, where he studied chemistry under the late Sir William Ramsay, whose pioneer work in advanced—and what we believe can be termed pure science (even if it led under Professor Ramsay to practical ends), has made both the laboratories and their owner so famous. Like Pasteur, Ramsay may be with us no more in body, but he will always be everywhere in the benefits he has showered over the public, not only in this country but in other centres as well.

Although he left the Whitgift just twenty years after we did, so far as we remember Mr. Porritt was Secretary of the Scientific Society of the school, and at the same time editor of the magazine. He was the vice-captain of the school and senior prefect. He was, we believe, in the first fifteen and in the second eleven for cricket—and in all cases good at sports and science. As it was in the beginning, so did it continue at College, only more so. "Our Friend" was in the first fifteen and also the first eleven, whilst he was a member of the Union Committee, the athletic secretary, attached to the Faculty of Science, and was as well the Treasurer of the College Chemical Society. After he left college, Mr. Porritt was captain of the Weba Rifle Club, and chairman of the Weba Tennis Club. He owns or owned a five-ton cutter yacht named the "Osprey," and is a member of the Royal Forth Yacht Club.

Going back to the scientific side, Mr. Porritt graduated with honours at University College, and then took up chemical research work whilst following a course of bacteriology. In 1908, he gave up his work to become chemist of the North British Rubber Co., and the last we heard of his work up there was to the effect that there are twelve fully qualified men with Mr. Porritt as their chief.

Outside the works, "Our Friend" is a member of the Institute of Chemistry, and of the Electrical Research Committee, besides being attached to committees of other scientific societies. During all this time he has given us the benefit of his views in print, first of all as the author of a well-known book, *The Chemistry of Rubber*, of which a second edition is in progress of compilation, and also in his contributions to the scientific and technical trade journals. As *The India Rubber Journal* reminds us, the investigations in connection with the manufacture and testing of balloon fabrics carried out by Mr. Porritt and his staff prior to the war proved subsequently of great value and the organization and equipment of the aeronautical laboratory at the North British Company's works supplied the model from which H.M. Aircraft Fabrics Department at Manchester was evolved.

Of course on being appointed to his present position

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Business Notices.

1.—The address of TROPICAL LIFE is Messrs. BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

2.—All **literary communications** should be addressed **to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

3.—All **business communications and payments,** either for subscriptions or advertisements, should be sent **to the Publishers** of TROPICAL LIFE. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

4.—The Subscription, which is **Ten Shillings** per annum, may commence at any time, and is payable in advance. Life Subscription, £5.

5.—The Advertisement Department is at 112, Fenchurch Street, E.C., where all inquiries respecting advertisements, charges, &c., should be addressed c/o the Manager of the Department. At the same time will advertisers kindly note that all copy and blocks for advertisements must be sent to 112, Fenchurch Street, E.C., before the thirteenth of each month, failing which, insertion of same in current month cannot be guaranteed.

6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Advertisers are only entitled to three changes of matter in the year of twelve issues, unless (1) they send electros for insertion, or (2) are willing to pay for the cost of setting up the advertisement. Owing to present high cost of composition and printing work we cannot depart from this rule.

8.—Changes of address should be promptly notified.

9.—Non-receipt of copies of the Journal should be notified to the Publishers.

10.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

JUNE, 1920.

The First Imperial Entomological Conference, Burlington House, 1920.

A Quicker, Surer and Safer World's Peace lies behind the Modern Entomologist and Mycologist than the Public can ever realize.

WE have been noting with pleasure the tribute paid by the London papers to this important Conference, one which we trust will be repeated every fifth year from now, if not every third one. Possibly it would be better for some reasons not to have it always in London; probably, since all these Sons of the Empire come naturally to the Motherland, it will always be easier to do so. As we say in our sub-headline, a quicker, surer and safer World's Peace lies behind the modern entomologist and mycologist than the public can ever realize. The millions of money that we should save annually, just when money and credit is barely less important than the food itself, alone forces those able to realize the importance of plant and economic entomology generally to pay homage to such men, to thank them for what they have done, and to beg them to go on doing as good work in the future.

The London *Observer* put the case tersely but correctly when it said that the public "know little of the real struggle between insect and man even on this side. In the tropics, where insect life attains its zenith, the warfare is grim and unceasing." It is war with a vengeance—a war running into millions, especially when you lose sums like the £40,000,000 lost through cotton pests in America and £10,000,000 from the same cause in Egypt, and, who can say, how much more for lowered wheat, sugar and other crops through their particular pests. Rats do incalculable harm, but probably pests exceed even their mischief.

Realizing this, we asked Dr. Guy Marshall, the Director of the Imperial Bureau, whose headquarters are at South Kensington (Natural History Museum), if we could attend the Conference, although not an entomologist, and have to thank the Bureau and its Director for one of the most profitable ten days that we have passed since the two congresses we attended in June and July, 1914, just before the war started.

The papers discussed were:—

(1) "Legislation in regard to Plant Pests in the British Empire," Mr. Lounsbury and Mr. Stockdale.

(2) "Cotton Pests," Mr. Ballou. "Organization of Entomological Work in the Anglo-Egyptian Sudan," Mr. H. H. King.

(3) "The Education of Economic Entomologists," Professor Maxwell Lefroy and Professor S. J. Hickson, F.R.S.

(4) "The Tse-tse Fly Problem," Mr. R. W. Jack and Mr. Ll. Lloyd.

(5) "Resistance of Plants to Insect Attacks," Mr. H. A. Ballou.

(6) "Insect Pests of British Guiana" (slides shown), Mr. G. E. Bodkin.

(7) "Insect Pests of Trinidad" (with slides), Mr. F. W. Urich.

(8) "Review of the Conditions in the West Indies in regard to Agriculture and Crop Pests," Mr. Ballou.

(9) "Artificial *v.* Natural Methods of Control of Insect Pests," Mr. F. W. Urich.

(10) "Insects in relation to Afforestation" (with slides), by Dr. S. MacDougall.

(11) "Insect Pests of Tea in Ceylon," Mr. F. A. Stockdale.

(12) "The Need of Increased Silk Production in the "Empire" (at the Imperial Institute on Friday, June 11th).

We were sorry that Mr. W. H. Patterson of the Gold Coast did not give us a paper. One hears so much of pests in the Gold Coast and how abandoned estates and neglected areas are aggravating the situation, that one cannot help feeling that the official delegate of this, the chief cocoa-producing centre of the world, should have been among the first to state his case, report progress made, and ask his fellow-entomologists to give their views. We also looked in vain for Mr. A. E. Evans, the chief travelling instructor on the Gold Coast, whom we know is on this

side, but unfortunately for us, he did not put in an appearance. We suppose, being on leave, he felt he was, at least temporarily, "immune from pests."

Needless to say, old acquaintanceships were renewed and new ones made. Mr. Stockdale had not been here since 1914, Mr. Urich since 1903, and so on. At the conversazione at the Natural History Museum on the afternoon of the second day we discussed cocoa in Uganda with Mr. Gowdey, and prospects generally in East Africa, but especially round Fort Hall and Nairobi (where some new subscribers have gone) with Mr. Anderson.

We had intended to head these notes with a photo group of the official delegates to show who was who. We had Dr. Marshall in the middle and several of the "elders" among us, but unfortunately the plate got spoiled, and so we are unable to do as we wanted to. We hope to be able to do so, however, when the next conference comes along.

Unfortunately it seems that no published report of the proceedings will be issued. Those for whose benefit the Conference was called heard what was said, and so, we suppose, it is felt that there is no need (in these days of huge costs for printing) to publish what is already known. This being so, we can only regret that the man-in-the-street, either over here or in the tropics, cannot become fully aware of what is being done for him. This is why it is gratifying to see reports of the proceedings in the London papers. One advantage of issuing a report of the Conference would be to lay the whole matter before the press, and so get further reviews and critiques on it. Is it worth doing so? Evidently the answer has been in the negative.

Between the discussion and subsequent conversations, we learned that an old idea of ours has been accepted as feasible and even passed into practice, in Australia, we believe, viz., the use of introduction or quarantine gardens for the plants which are on the black list and must not be imported. In such areas can be planted the originals and a wide isolation belt be left round them. An important factor would be that these gardens are always only to be under the charge of the Agricultural Department, who can alone receive the seeds or plants, and pass on the native production therefrom (never the originals) to be planted out up-country. We believe such gardens can possibly be made much more use of in the future.

A point emphasized by several of the speakers that is worth remembering, even by the mere practical planter, is that with research work the unknown and unexpected is as important, and perhaps more so, than what is being searched for and known of. Those, therefore, who imagine that they can do without the plant doctor run a double risk at times. What you believe is the cause of the trouble may be but a secondary evil, or else careful investigations, such as only a trained man, and a first-class man, too, can carry out, can—and do—lead to far more important results than even the scientist suspects when he starts.

Certificates given out at port of origin as to freedom from pests are not in favour. We are not surprised. Those plants with the most elaborate certificate can need and, at times, do need, the most attention. They appear to get it, thank goodness.

Indifference on the part of those in command at home, i.e., the public, the Members of Parliament, &c., was commented on. This caused us to intervene in the debate to point out those ex-army men and others who have recently called on us bore witness to the regard, and even the fear, they had of the pests that affected the crops. They knew but little of the crops, but they knew of the danger of pests if allowed to run riot. We believe, therefore, that the break caused by the war, the lessons of the plague of pests in the trenches, and the effect of the war causing many men to look for a life in the open—planting, for instance—is sending a new class of men to the land, a class who not only will support the entomologists, but clamour for their help. Such men could and probably will cause a change of opinion at home. Their life in the trenches has made them stern anti-pestites, and any sign of stinting in money and plant-doctors to reduce the trouble will no more be tolerated than would carelessness or indifference be tolerated over here were an epidemic of small-pox to break out in a crowded neighbourhood.

Thus the turn in the long lane to deserved success and warm appreciation in the history of economic entomology has been reached. This, the first of our Imperial Conferences, has shown this. The next meeting should show that it has been left far behind. The new generation of planter will, we believe, be as keen, and even more keen, to see that there is a first-rate plant-doctor at hand and specialists within reach, as he will be to learn that there is a medical man to attend to his own ills. The Agricultural Colleges (to be) in Ceylon and the West Indies will be able to help increase the supply of plant-doctors and turn them out as skilled and as keen as those of the old, and already honoured, brigade* who we had the pleasure of greeting in the historic rooms of the Linnæan Society at Burlington House. It is to be hoped, therefore, that those Colleges will soon be established and put to work.

Later on we shall refer to the Conference again when discussing Thrips on Cacao Estates, about which we learned much from Mr. Urich, Mr. Ballou and others. Insufficient cultivation and drainage, exposure of the trees to the wind and the soil to the sun, lack of the necessary plant-foods and of sufficient aeration to the roots, all these weaken the trees and encourage attack. Given the opposite of the above, and therefore healthy, vigorous trees, and the thrips nearly, if not completely, disappear. Should any be left they do but little apparent harm in comparison. We have a copy of Dr. Zehntner's report on thrips and mosquilla in Bahia. When we publish an extract of this we shall refer to the notes we made at the Conference on the subject.

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* These pest-fighters also greeted their chiefs in a way that must have been as gratifying to them as it was pleasant to hear. Such leaders as Professor Maxwell Lefroy and Mr. Ballou reminded us of what they owed in the way of encouragement and kindly help to Sir Daniel Morris (who was in the chair looking wondrously juvenile), or when Dr. Howard, of the American Department, was publicly asked to take back to America the thanks of the entomologists for the generous manner in which they have always been ready and willing to supply us with their publications. We were fortunate enough to be able to add our word to Dr. Howard and to ask him to say that economic journalists were equally grateful, and had even more reason than the scientists to be so.

Lord Haldane and Education.

ESTABLISH AGRICULTURAL COLLEGES IN THE TROPICS, AND EASE THE BURDEN OF TAXATION AT HOME.

THE other day at the annual meeting of the S.P.E.L. (Social and Political Education League), of which we are members, we had the advantage of hearing both Dean Inge and Lord Haldane discuss Education. Lord Haldane's paper, Mr. G. P. Gooch told us afterwards was to appear in the *Contemporary Review*. Those interested in the subject—and who is not?—will be well advised to hunt up the number of that review with this article and study what it has to say. It will lose nothing by being printed. Our ex-War Minister's remarks at times were very applicable to the question of Agricultural Colleges in the British tropics for which we have been agitating for over a dozen years. They also supported our remarks on the narrow limits of the present English system of education, which were included in "How to Pay for the War," Chapter VII, and elsewhere. Lord Haldane, undoubtedly our leading spirit in popularising and extending the scope of education, especially in its secondary and higher branches, claims that "the present education ladder is too narrow and too little used." We know it to be both, but until the steps are made broader this must continue. When those Agricultural Colleges are at work in the tropics, the width of these steps will be trebled. Then, but not until then, will the road from the school in England to assured success in the tropics (again quoting "How to Pay for the War") be a wide straight way open to all, along which any parent can start his son or daughter, knowing that with an average amount of ability and application they are sure to make good in the end and benefit both themselves and their country.

Where the general public at home are particularly blind with regard to the benefits of these colleges to themselves, lies in the fact that the more you educate the rising generation to go abroad and develop the resources of the Empire itself, or to widen our trade channels with other countries, the greater will be the relief in taxation to those at home, including those even who are too indolent and selfish or else not sufficiently educated under our present narrow educational policy to be aware of the fact. Extend our commerce abroad and develop the resources of the Empire and it must follow automatically that you will broaden the basis of taxation and so relieve the *per capita* amount of those at home. For this reason alone, the immediate establishment of at least two colleges, one in the West Indies and one in Ceylon, should be brought about, especially the West Indian one. Once started it would pay for itself very soon. The only trouble is, how can we drive home this important fact to the self-absorbed British public, rendered extra dull-headed owing to the sorrows and burdens of the war?

NEXT month we hope to find room to review Lieut.-Col. James's important work on "Malaria at Home and Abroad" (price 25s. net, weight 28 oz.), recently issued by Messrs. John Bale, Sons and Danielsson, Ltd., as one of their Series of Medical Books and Journals. The importance that such a book by so well-known an authority as Colonel James is bound to play in the world-fight against malaria cannot be over-estimated. The tropics everywhere will be glad to know of the book, which can be understood and utilized by managers as well as by the medical officers of health on the estates or in the towns.

Coconut Notes.—No. 1.

THE PHILIPPINES AND FIBRE EXTRACTION.

AS we have of late had to write nearly a score of letters besides giving personal advice on what can be done in theory if not in practice, with coconuts, it may be of use to our other readers to reproduce a portion of what we have been saying. Firstly, a good many enquiries have been over coir extraction. In this we referred our correspondents to that section in our own book,[1] which deals with the matter of extraction, especially as some two years ago, in November, 1918, Mr. F. V. Valencia, the testing engineer of the Bureau of Science at Manila, quoted us at some length, and even gave the full list of the various machines needed to form a complete plant on up-to-date lines, which will be found on page 574 of our book. At the same time we hope our readers will read Mr. Valencia's article on "The Mechanical Extraction of Coir," with its three illustrations, for it has much to say that should be borne in mind especially as improved appliances come along.

The exploitation of an industry, first to extract the fibre and then to make it up into brushware, mats, &c., as described in our book, also appeals to the experts in the Philippines. Such an industry, writes Mr. Valencia, would not only result in utilising the husks but would at the same time tend to eliminate their use as fuel in the grill-drying of copra and thus obviate an amount of smoke that produces a dark-coloured copra of inferior grade. The ash is generally used as a fertilizer, and rejected husks are frequently incinerated in large heaps for the manurial value of the ash. The coir industry in Ceylon is well established and gives household employment to many women and children. Prudhomme says that in Ceylon a thousand husks yield on an average from 68 to 79 kilos of fibre. These figures may be taken to represent the average commercial yield of fibre in India, Ceylon, Straits Settlements, Java and Indo-China. Saleeby talked of a thousand nuts to 75 kilos of fibres, say 65 kilos are yarn fibre and 10 kilos brush fibre. The question of manual labour is against the full development of the industry and this is of course where the need of mechanical appliances comes in.

The experiments carried out by the Bureau to test the possibilities of the various machines for extracting the fibre are worthy of close attention, for these Philippine officials have their heart in their work, and go slow but sure. The pity is that no mention is made of the names of those makers whose machines were used. All we are told is that they were made by an apparently reputable concern and have been widely advertised. One wonders who it can be as we have been looking out for a good maker of fibre-extracting machinery to come in and work with us, and were unable to find one. To advertise in a book once is not enough, you must keep on. The Lancaster Engineering Corporation of New York realise this but the only firm we know of on this side does not advertise at all so far as we know. The machines used

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[1] "Coconuts—the Consols of the East." 13s. 6d. post free.

in the Manila experiments were in operation at the Souerabaya Fibre Exhibition, where they attracted considerable attention and received favourable comment. We are not surprised at this. Let a dozen makers of fibre extracting machinery exhibit their machines at the Agricultural Hall next June, and we are sure that these stalls will be inundated with enquiries. These are the days of by-products, alcohol from the milk, and fibre from the husks, so if there are any makers who have enough confidence in their fibre-extracting machines to put them to the test next June it is to be hoped they will not be slow in coming forward. A note worth remembering is that the fibre can probably be extracted most satisfactorily from hand-husked nuts. In any case do not cut your fibres when removing the husk as that would shorten a big percentage of the fibre and spoil the contents generally. They should be torn asunder and pulled off.

In this same issue of the Philippine *Journal of Science*, November, 1918, Mr. Albert E. W. King also discusses and compares the mechanical properties of coir and coir cordage with abaca, more generally known as Manila hemp. The bibliography in the many footnotes will be most useful to those interested in the matter. Mr. King, not without reason, finds our present knowledge of the strength and durability of coir and cordage very inadequate. It certainly appears to show but scant progress since the Dr. William Roxburgh, of the East Indian Company's Garden in Calcutta, wrote on the subject over a hundred years ago. Dr. Roxburgh was born in 1759, and died in 1815. It is time therefore that renewed interest was taken in coir, its advantages and drawbacks as a fibre.

In the various lists quoted, the older names strike one as a little curious, they are however useful to have when reading Royle's "Fibrous Plants" of 1885, or Roxburghe's twenty-one different kinds, which Royle also includes in his work.

In the Philippines, Mr. King tells us, most of the husks up to the present time, i.e., 1918, have been either burned as fuel or allowed to rot. No figures are available as to the number annually worked for fibre, but the quantity is small and the industry has no commercial importance, in spite of the efforts made to encourage it. It has been estimated that 735 million nuts were gathered in the Philippine Islands in 1916. At 40 nuts to the tree, this would mean only about 18½ million trees, about one half of the possible total, certainly not more than two thirds of the entire number of palms estimated to be found in the islands. From the husks of these 735 million nuts, 81,000 tons of fibres, it is claimed, could be approximately obtained. It is not hard to closely estimate the value of such a quantity of fibre, the breaking strain of which is put at 224 lb. The query is, can the world absorb such a quantity on the top of what it is already receiving from India, Ceylon, Malaya? Could new uses be developed or would it come about, were the ideal machinery for extracting the coir fibre to be placed on the market, that the level of prices for present supplies would go so low as to knock the bottom out of the industry generally, whether hand-made or machine-made fibre? There is no doubt, if machinery were to be successfully introduced, that the output of fibre would be greatly increased. How would that increase be used up?

(To be continued.)

India's Progress.

"THE HANDBOOK OF (INDIAN) COMMERCIAL INFORMATION."

As did little Toomai wish to make obeisance to Petersen Sahib as he rolled off the back of Kala Nag after being there all night whilst the elephants danced on the Garo Hills in Kipling's "Jungle Book," so we wish to make obeisance to Mr. Cotton and those with him responsible for the compilation of "The Handbook of Commercial Information for India," which Mr. D. T. Chadwick, the Trade Commissioner for India in London, was kind enough to send us. If you wish to imagine that such a book is dull, we would suggest that you turn to the index alone, as we did, and compare the forty to sixty entries under cotton, rice and tea and the lesser number for rubber, sugar, &c., and then compare the most interesting of these items with the book itself. The only word of warning we would raise is, that, judging by the plight it put us into, take our advice, if you are busy, and do not look at the index until you have a little leisure.

In a future issue we will discuss some of the items, but in this number we would like to quote a sentence from Mr. Chadwick's letter to us, as it is not without interest. Referring to the article on p. 75 of our last issue on "Higher Education in the British Tropics," the above letter says: "I think a slight confusion has possibly arisen in your article on Agricultural Education through the use of the word 'Imperial' in the quotation you make from the *Planters' Gazette*. Agricultural education in India, with the exception of Pusa, is under the control of the Provincial Governments. What has happened, of which everyone is glad, is that the Government of India has been able to make an allotment from its resources to the Provincial Government for the specific purpose of furthering agricultural education in the Provinces. This is what is meant by the 'Imperial' allotment. It is an allotment purely made from the revenues of India between the Central and Provincial Governments of India, and has nothing to do with the British Empire. This restricted use of the word 'Imperial' in India to denote action by the Central Government of India as distinguished from the Provincial Government is, in certain connections, of very old and very long standing. It was the English Parliament that first gave official recognition to the word 'Empire,' and then, at that time, applied it to India."

Trade, Politics and Finance.

BANKING and commercial circles are congratulating themselves on the excellent progress made in our exports in May, which averaged just over four and a half millions sterling per day for twenty-five working days. Meanwhile the United States Commissioner of Labour Statistics, Mr. Royal Meeking, claims that lower prices and increased production will not come just yet anywhere, mainly on account of instability owing to labour unrest, which must settle down before the edifice of world-production can start being built up. Recent Government loans are said to have done badly; this is not to be wondered at, since pressure has been put upon the banks to call in loans; instructions which they are, it is claimed, relentlessly

following, with the result that the small men, who make "big money" in the aggregate, are not only being forced to realize on a non-purchasing market and so losing heavily, but through this are so disgusted at the cause of the loss and trouble that any official or bank proposition, especially their own banks, is certain to be boycotted. These are trying times for Exchequer experts, and so it is all the more reason to move warily. Socialist and trade iconoclasts are not the only ones who realize that all this "pinching" is making all but the very big and wealthy firms and individuals poorer and weaker and increasing the power, and hence wealth-begetting ability of the huge firms (amalgamations of amalgamations) able to grasp both the trade and money that should come, and would come, to the medium-sized and smaller firms if merit and knowledge of the work alone told. We may have fought the Great War in favour of small nations and communities abroad, but it looks at times as if we are tending to squeeze out the small (and deserving) folks and firms at home. All reports speak of the abundance of money. There has been an abundance of loanable credit, we are told. Money is very easy, says the *Observer*. Why, therefore, pinch investors? Investment business has, of course, fallen off, and fears of further liquidation is squeezing the life out of all but the super-firms. Yet we are told "money is easy, loans are out at 3½ per cent. or less." Why, therefore, pinch the small investor who is paying 7 per cent. and 8 per cent. on his loans when he has to put his investments "up the spout" to carry on? It reminds us of the gilt side that the Chancellor of the Exchequer showed on the 8th when referring to the progress we were making in the repayment of our foreign debt, but did *not* speak of how this was being done, viz., by not paying interest on our debt to the U.S.A. this year; at least, that is the idea of the *Times* Supplement of June 12th on the matter. We are all right, and will remain so if *all* are allowed to help, but if the medium-sized and small men get over-harassed, the Chancellor of the Exchequer will find his amalgamated super-firms very delusive and elusive when he looks to them for help. Japan, we consider, tried this game and has come a momentary cropper. As with us, the very big banks floated along all right, thanks to the strength of their owners and directors, but the medium-sized and smaller grades have had a bad time. So much for finance; then comes goodwill to the powers that be—it is just as well not to alienate this, and too much pinching will do so with long-lasting effect.

Enough of that; let us look at the current markets. Cotton and sugar are, of course, very high, but many markets tend downwards. Copra is much lower, and yet oil-extractors and sellers claim that the price is still too high to leave them a profit. America says the same thing. All the same, prices at producing centres, although sagging, are much above our parity, as exporters feel the lull is but temporary, and that pressers must have the raw material when the present slump has passed.

As stated in the cocoa report, Jamaica is said to be asking £150 for sugar in Kingston and talks of £200 after August. No wonder the Cubans speak of a retail price of over 2s., and say they will hold what they have until they get it. Profiteers are, of course, the real cause of such prices, America especially, and so the *Confectionery Journal* of London reports with disgust that American prices are causing us to send the sugar we have over there. Like the ryot in India, who cannot, or thinks he cannot, afford to eat his own rice crop because of the big money offered him for it, it looks as if America, who has more sugar than anyone, is still not satisfied. Over here, in the free market, Crystallized West Indian sold at £152 to £155 and White Mauritius at £160. Middling American cotton is at 27.36d. for spot against just under 24d. in October and 22d. in March, 1921. With Shellac, T.N. Orange is at 610s. and A.C. Garnet at 570s. to 600s. Copra, which was at £75 at the end of last year, is now at £46 or a little below, with considerable uncertainty as how it will go. Sellers claim that there was no cause for the recent drop of £4 to £5, which they say is due to speculators (with money and who do not have to borrow from a bank) trying to break down values. If the public got the advantage of these falls no one would grumble. Where do they go to?—who can say? Is it to the big firms first, and then their workers, who, seeing what a lot of loot is there, strike for a bigger share, and so the producer and the public pay the price? With coconut oil, Ceylon is around £94 to £96, and Cochin £107 for spot, against £84 for linseed. Copper is about £88 spot to £91 10s. September delivery. Tin has advanced recently and is now £243 or £244. We have forgotten coffee. Receipts in Brazil are still behind, 6,547,000 bags, against 8,672,000 last year and 14,606,000 bags in 1917-18. Prices tend easier over here, except for the best, which were steady, Mysore going up at 165s. to 168s. for fine colory and 168s. 6d. for peaberry. Blue Mountain Jamaica went at 167s. to 175s. for peaberry, 175s. fine bold, and 149s. to 165s. for middling to good middling. Fine ordinary Uganda went at 111s. 6d., and Nairobi sold from 124s. to 129s. for small common up to 154s. for peaberry.

Regarding the world's visible supply, it is interesting to note that in a circular published in the *Correio da Manha*, Messrs. Pinto Lopes and Co. estimate the coming Brazilian coffee crop as follows: S. Paulo, 8,000,000 bags; Minas, Rio, and Victoria, 3,600,000 bags and other coffees 3,800,000 bags; total 15,400,000 bags. These conservative figures are somewhat offset by a bearish estimate of the world's consumption, which is put at 18,950,000. Undoubtedly consumption the world over is increasing and is already above 18,000,000 bags, but that it should reach almost 19,000,000 bags with prices and international exchanges where they are is a question which we will digest first and discuss after.

The following is a comparison of the principal points of the Bank of England on June 12th compared with last year:—

May 15.	1920	1919
Bank Bullion ...	£116,706,689	£87,029,228
Reserve of Notes ...	19,962,460	25,669,410
Private Securities ...	78,719,755	79,879,069
Notes in Circulation ...	114,367,090	78,008,175
Rate of Discount ...	7 per cent.	5 per cent.
Price of 2½ % Consols...	47	53¼d
Price of Bar Silver ...	51½d.	54d.

The London Cocoa Market.

BY THE EDITOR.

THERE is much to say about cocoa, and yet, with equal truth, one can well say there is nothing at all. To begin with, what sales have taken place of sufficient size to make them worthy of attention? None at all so far as I have heard. If this is so, how can one talk of prices and values when no sales have taken place to establish the ever-changing values of the various growths? When any business has been done, no one, at any rate no seller, has been grateful, but rather with each transaction has had harder things to say of the market and everything else, including all the Governments concerned, as being more or less the cause of the slump.

Accras certainly are spoken about the most, possibly because they have given and are giving the most trouble. To say the bottom has dropped out of the market is to put it mildly, and in making such a statement you must further own that the bottom has not only gone, but no one can say that the final drop is in sight.

At the same time the world wants the manufactured article, the same as it wants soaps and margarine made from vegetable oil as much and more than ever. The demand is universal and deep-set, and there it stops and will stop until the bottom is put back into the world's money-boxes, and, when this is done, there will not be quite such a bottomless pit in the vegetable oil and raw cocoa markets as there seems to be at the moment.

The shortage of sugar is the great trouble so far as raw cocoa is concerned, for even were the money there, the sugar is not, except in America, where the profiteers boast that sugar will go to over 2s. per lb., and Cuba is said, by a leading American broker, to have over a million tons laid up for that happy day —happy, that is, for the producer but not for the consumer, nor the cocoa manufacturer.*

Look up in reference books and see how the world's population is supposed to stand to-day as compared with 1914, when the world-production of sugar was said to be nearly 19,000,000 tons (10,000,000 cane and 9,000,000 beet). Since then populations are said to have been increasing in numbers until, even with the reduced *per capita* allowance since the war started, we are supposed to be needing 600,000 tons more sugar each year, or 3,000,000 tons more this year than the quantity which satisfied us when the war started.

This being so, one cannot wonder that the bottom has dropped out of the cocoa market for the time being, when you remember that, instead of receiving about 22,000,000 tons as our allowance of sugar for this year, the crop (according to the most careful calculations, viz., those of Willett and Gray of New York) only works out at 15,576,929 tons, or barely two-thirds of what we require, judging by pre-war standards. This means that where we used to get along comfortably with 90 lb. per head per year, we now receive but very little more than 60 lb., and as America, having scraped in other countries' loose cash to pay for the war, can exact 102 lb. per head because she can pay for it, Europe has to go very short. This must continue to be so until the Central Powers can supply themselves, and so the cocoa market must and will continue to languish because the world, outside America (China and Japan do not take manufactured or raw cocoa), is not over-blessed with cash and has to put up with but a fraction of a lb. of sugar per week, so that whatever the consumption per head, taking the country as a whole, may work out at on paper, the household supply in the United Kingdom is but ½ lb. per week, and much less on the Continent. Cocoa-powder is not wanted whilst this lasts—it cannot be.

It would be instructive to have producers' first-hand views of the state of the New York demand for raw cocoa as opposed to those who claim that she has been over-buying herself for months, and is now a seller both of powder and raw cocoa. One wonders also how much truth there is that she is having less trouble to sell her raw cocoa than her powder. The report in the *Times* Trade Supplement of June 12th said that Jamaica refused an offer of £130 per ton f.o.b. Kingston for her sugar, and is asking £150, equal to about 1s. 4d. per lb. for deliveries up to August, and that after that month the price will be £200 a ton, or over 1s. 9d. per lb. out there. If, therefore, sugar is already "holding up" the demand for powder, and so checking the orders for raw cocoa now, what will it be if such prices rule at primary sources after August as the one quoted? Before I leave the Supplement and its news, it is also worth noting that their correspondent at Sekondi on the Gold Coast reported that the fall in cocoa prices has caused many firms under contract to lose their profit. We have no doubt that this is correct, and feel that, unfortunately, in the same way as we still do not seem to have reached the bottom, so no one can say how the Coast men will fare until a stable base is reached from which, no doubt when it is found, a start to climb up again will be made. The Sekondi correspondent also suggests this, for he claims that on the Coast the market will open in October with prices at a higher level than those paid recently. That the last drop in London will change the notes of this tune is more probable than not, as at present the chances are against higher prices. Reports, however, from Liverpool and Bordeaux just in spoke of more interest being shown in sellers' proposals.

Speaking of the Gold Coast reminds me that I have to thank the Comptroller of Customs at Accra for the cocoa export figures from that port, say: January, 16,513 tons; February, 12,795; March, 21,044, making 50,352 tons in all. One wonders in face of this what the April and May exports have been. Perhaps it is as well that we do not know. Surely, however, the

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* So far as can be ascertained, this stock is arrived at as follows:—

	Long Tons.
Produced to March 31st	1,990,916
Exported to March 31st	1,307,000
Leaves ...	683,916
Deduct Local Consumption	24,500
Leaves ...	659,416
Add Stock already on hand	350,000
Leaves possible stock at end of March	1,009,416

above rather tends to dispel the statement that from January onwards the Gold Coast was to be short of supplies. Can anyone say they are short with such exports? Truth will out, though, of course, belated returns delay its appearance. Now we begin to see "what's what," and knowing how full America is of cocoa, especially Accras, it is not surprising that the price has dropped as it has. Unfortunately, the West Indian growths, whose movements are up to date, are bound to suffer because of the slump in Accras.

Lagos exported 3,000 tons in January and 2,970 tons in February, making 5,970 tons for the two months, or, with Calabar, &c., 6,190 tons. Last year Lagos only got away 3,110 tons in the two months.

New York during January and February received 379,836 bags of cocoa, including 97,500 West African, as compared with 175,872 last year (2,726 Accras only) and 405,392 bags in 1918 during the two months. Havre received during the five months, January-May, 19,000 bags of Accras against 16,500 last year, whilst, during the same period, 54,000 (Accras) were delivered against 92 (ninety-two) bags only last year and 21,500 bags in 1918.

Whilst discussing Havre we might as well jot down its stock. May was not an idle month; added to the 147,343 bags in stock at the end of April, 118,258 bags were cleared, including 66,000 San Thomé and 19,000 Bahia, and there were, on May 31st, 110,000 waiting to come in (including 20,700 San Thomés in one boat), and 43,000 delivered, leaving 222,572 bags in hand as under at the end of May. Exchange in France is still around fcs. 50 or a little more to the £ sterling, which, in its turn, is equal to about $3.95 cents in New York, so this must still be calculated in the prices below:—

Havre's Stock, May 31st.

	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará	4,613	350 to 380	2,601	148 to 153
Bahia	28,662	290 ,, 340	30,211	160 ,, 175
Venezuela ...	18,047	345 ,, 460	5,882	166 ,, 225
Trinidads ...	36,947	335 ,, 375	15,010	158 ,, 165
Grenada & O.W.I.	10	320 ,, 360	5,323	153 ,, 165
San Thomé ...	62,526	300 ,, 350	4	142 ,, 153
San Domingo ...	7,108	290 ,, 320	Nil	135 ,, 148
Haiti	13,696	250 ,, 300	11,441	125 ,, 150
Accras, &c. ...	19,664	260 ,, 290	16,427	125 ,, 132
Guayaquils ...	12,947	410 ,, 440	66,048	155 ,, 165
Other kinds ...	18,352	—	1,325	—
Totals ...222,572 bags			154,272 bags	

Against this the stock in London ran thus on June 12th:—

London Stock, June 12th.	1920 Bags	1919 Bags	1918 Bags	1917 Bags
Trinidads	37,833	17,759	12,719	29,184
Grenadas	24,484	9,523	20,163	30,028
Other W.I.	11,907	2,417	7,017	30,391
British African ...	70,929	41,681	43,714	50,085
Portuguese African ...	7,604	4,480	4,065	19,190
Cameroons	1,378	476	4,246	17,048
Ceylon and Java ...	19,982	9,188	20,833	37,197
Guayaquils	43,482	19,323	37,087	61,798
Bahia and Brazil ...	132	986	4,279	8,156
Other foreign ...	27,021	3,288	7,621	8,313
Totals ...	244,752	109,121	161,744	291,390

Coming to the Board of Trade figures, it is pleasanter to see an increase, although a small one, in the deliveries for home consumption during May, instead of such deficits as those of the previous months as shown in 2,420 tons that we are still behind last year, and the 3,500 tons behind the home consumption deliveries for January-May in 1918. Here are the figures:—

Raw cocoa movements in the U.K.	Landed Tons	Del'd H.C. Tons	Exported Tons	Stock, May 31st Tons
Jan.-May 1918. ...	9,808 ...	28,164 ...	583 ...	25,250
,, ,, 1919. ...	61,303 ...	27,022 ...	1,022 ...	54,800
,, ,, 1920. ...	61,230 ...	24,602 ...	16,428 ...	61,600
	Decr. 73	Decr. 2,420	Incr. 15,406	Incr. 6,800

In May only we received 16,571 tons, including 9,660 tons of West African, and took 5,336 tons into home consumption (against 4,863 last year), and exported 2,665 tons. These movements, therefore, increased the stock in the United Kingdom by 8,500 tons. With foreign manufactured we received 7,490 tons as compared with 5,068 tons in 1913, i.e., before the war, and took into consumption the same quantity as in that year, viz., 4,928 against 4,916 tons.

The present stock, 61,600 tons at 15½ bags to the ton, gives nearly a million bags, of which Liverpool must have 75 per cent. and London 25 per cent., judging by the figures published of these two ports, apart from other receiving centres.

Guayaquils, in common with other growths, are difficult to value; no one can say what their sale value is; very wide differences occur in any prices mentioned. Mr. Rorer is busy at work over there with the pest or pests that seem doing so much harm, although the receipts in Guayaquil City seem as heavy as ever. I will do my best to translate a portion of the report that the Association of Planters (or Mr. Rorer) has been kind enough to send me and compare that with a translation of Dr. Zehntner's report of the pest in Bahia. Mr. Urich told me that the leading agricultural authority in San Thomé is expected to visit Trinidad to see what they are doing to fight thrips. Meanwhile there have been no figures from M. Mantero at Lisbon for some time. It will be necessary again to write over and see what has been done. The following figures from Ecuador are not without interest. As I have often wondered who received the Guayaquil cocoa, perhaps others may be equally curious. The following is from the report issued by the A.A.E. (Asociación de Agricultores del Ecuador), dated February 19, 1920: If pests have done 80 per cent. to 90 per cent. harm, as some claim, this is not reflected on the receipts. What, therefore, has been harmed? Is it the pods or the younger trees? The great trouble is the water disease of the pods, which is discussed on p. 142 of the *Agricultural News* of Barbados of May 1st for those who cannot read Spanish. Here are the Guayaquil receipts:—

Crop	Arriba	Balao	Machala	Total
	Quintales of 100 lb. or 46 kilos net.			
1919 ...	638,761 ...	90,000 ...	21,721 ...	750,482
1918 ...	601,804 ...	133,282 ...	25,201 ...	760,287
1917 ...	676,408 ...	176,389 ...	48,156 ...	900,953
1916 ...	701,284 ...	211,872 ...	67,393 ...	980,549
1915 ...	513,047 ...	136,587 ...	64,151 ...	713,785
1914 ...	703,698 ...	145,846 ...	72,595 ...	922,139
1913 ...	574,189 ...	187,174 ...	97,721 ...	859,084
1912 ...	534,738 ...	129,751 ...	64,433 ...	728,922

Besides the above, 23,658 quintales went to Puerto Bolivar and 27,000 to Bahia de Caraquez.

Cocoa exports (in bags, not quintales) from the Port of Guayaquil in 1919:—

12 months	Bags	By the month	Bags
To U.S.A.	214,065	January	34,732
,, France	154,615	February	107,230
,, Spain	24,505	March	67,342
,, U.K.	88,161	April	81,887
,, Holland	6,150	May	32,600
,, Denmark	1,300	June	48,057
,, Sweden	500	July	23,292
,, Chili	1,561	August	23,895
,, Italy	3,750	September	13,651
,, Colombia	300	October	35,015
,, Mexico	115	November	10,659
,, Peru	188	December	16,850
Total	495,210	Total	495,210

According to the Kandy correspondent of the *Times of Ceylon*, five acres of land have been purchased near Peradeniya Junction, where it is proposed to establish a cocoa and chocolate factory, and possibly, later on, sweets as well. So long as the proprietors can get the sugar they will need such a factory should do well.

There is not much to say about prices and values because, as already stated, there is a divergence of views on this point that is very disconcerting and, at times, positively appalling to anyone trying to convey a correct idea of how prices run. Accras, of which there seems less doubt, run from 75s. to 80s., perhaps a little more if the buyer has been less cute than the seller. But it is to be hoped that there is as yet no need to put fine Grenadas (June 12th) below 120s., as one contemporary has just done, although the later reports rather tend to confirm this. At any rate, no one can say that it is not as correct as 120s. or 112s. would be.

This being so, Other West Indian kinds, as well as Bahias and San Thomés, must be valued accordingly. So long as demand and values in New York continue to weaken, our market cannot gather strength. Every country, America especially, still seems liable, as before the war, to dump what they do not like upon these shores. Goods made in Germany, promises from Russia, undesirable political agitators from many places, social scum from Port Said, or surplus cocoa beans and powder from New York—"Let them all come; the happiness of the Empire demands it," say some Members of Parliament, and so they will continue to come.

The cocoa powder and chocolate alone interest us, since they tend to rather complicate matters, so far as sales of raw cocoa are concerned, as they all go to help discourage home manufactures, and hence further buying of raw cocoa. Until actual and continued transactions take place, sufficiently large really to "make" a market, prices must remain nominal and uncertain, especially with Guayaquils, Ceylons, &c. What is Arriba Guayaquil worth, for instance? 170s. or 175s. according to the last sales reported here. 130s. c. and f. according to current quotations; 145s. spot says one buyer, and 160s. spot says a seller—so each one values as he thinks best. The same must be said of Grenadas and Accras. One maker claims to be waiting for f.f. Accras to go to 50s.

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The Coming Rubber and Tropical Products Exhibition and Congress.

LEAVING the Exhibition to take care of itself, which we understand it is doing wondrously well, most of the space in the Main Hall having been booked, whilst a magnificent Belgian exhibit will fill one of the long galleries, we want to say two words about the Congress and to invite those who can to come and tell us all that has been happening since 1914.

The Congress will constitute the first international gathering of planters, experts and manufacturers since the war, i.e., since the last Congress was held in 1914. The knowledge and needs of everyone has advanced in all ways since then. The experience of the war has clinched the fact on to the mind of the most casual observer that tropical products are a stern necessity both to the arts of peace as to those of war. We simply must have them, and the query is how can we assure supplies at the most reasonable cost with the somewhat restricted labour supply (in comparison to our needs) both in the tropics and over here. What new appliances exist to help that we do not yet know of? Rubber is being well looked after, cotton is in capable hands. This leaves vegetable oils and cacao. For vegetable oils we want a leading man in the producing world to act as chairman of the section under Dr. Torrey, the chairman of the whole Congress. Who can it be? Sir Stanley Bois or the representative of a leading estate agency firm interested in coconuts, as Messrs. Harrison and Crosfield, Ltd.? What of Mr. Pickering Jones of Liverpool, certainly for oils other than coconut? M. Emile Baillaud of the Institut Coloniale of Marseilles knows the industry well, and is also at home with the English language. We hope he will come in as one of the chairmen of this section. We should like to receive names of others, especially those who can influence papers on oil-extraction by one or other processes, and the best methods for keeping the oil good until sold.

The cacao section is getting on so far as chairmen are concerned The editor of this paper will be in charge of the British Colonial, and M. Emile Alleaume we hope (and believe) of the foreign. Meanwhile, as discussed in the usual market report at the end of this issue, will our readers please suggest subjects for discussion, also, and better still, send over the titles of the papers they hope to read themselves or will be sending in their absence? As we write these lines Mr. Knapp's (of Messrs. Cadbury's) new book is given into our hands. It contains much up-to-date information which leads us to want still more when Mr. Knapp and others attend the Congress next June.

Proposed Trade Commissioner in the U.K. for West Africa.

A PROPOSAL is in the air to appoint a Trade Commissioner with headquarters, probably in London (Liverpool may have certain attractions, but London is the chief trade centre), to represent West Africa and West African interests on this side. On the face of it such an appointment must work for the benefit of both sides in the same way, so we understand, as Mr. D. T. Chadwick's appointment as Trade Commissioner in London for India is proving so beneficial for that country and those interested in her trade through London.

Of course, everything will depend on the man or men appointed; the latter in case it is found better to appoint two men at £600, £750 or £1,000 each, than one man at double these salaries. If two were appointed one could then devote himself entirely to the production side by giving advice to actual or prospective planters of vegetable oils, cacao, rice or any other crop recommended by his fellow commissioner who would be engaged in pushing the sale of the crops produced on the one hand, or encouraging further production (if the world can absorb it) on the other. As with cacao at the moment, it may be best to cut down further output in every way possible, but then we want more cotton, rice, sugar, maize, wheat and many other things. The Agricultural Trade Commissioner, knowing this, will be able to say which of the wanted crops West Africa can produce, and then encourage their cultivation over as wide an area as possible; whilst, as stated above with cacao, if the world production of any crop produced along the coast tends to be too heavy, further cultivation can be checked.

On this side also, if " white " capital should ever be required for West Africa the Trade Commissioner, once the financial world had confidence in his opinion, would be the best man to induce the capitalists to come forward quickly with whatever money was needed.

West Africa has important commercial and mining interests, both dependent on agriculture and the agricultural areas, and so are the railways (of to-day and to-morrow), since all require labour from such places as well as the produce to trade with or as foodstuffs, and the colony generally must have larger and larger crops of a suitable kind so that it can afford to be developed, and especially to enable the areas to be developed to stand the cost of a carefully planned network of main railways with light railways, motor transport and roads to bring the goods to the main lines. Here, again, a thoroughly experienced and skilled man (not a mere press agent nor a teller of attractive tales for official reports) is needed, so that what he recommends will be really deserving of support, and what he tells the investor or merchant to " plump for " will be above the usual level so far as reasonable risks are concerned.

The right men must be chosen, and adequately remunerated. If they deserve salaries running into four figures, by all means let them have it—or " the push " if otherwise. They must be as near perfection or nothing. For the Agricultural Commissioner, we should imagine, if the unconquerable inclination to keep in the background can be overcome, Mr. A. E. Evans, the Chief Travelling Inspector, would be difficult to beat, for, like Mr. Chadwick (who was a leading Director of Agriculture in India when sent on that trade mission to Russia) before he came to London, Mr. Evans has had many years' experience on the Coast. We only wish we had half his knowledge, for then we would " make good " in the produce markets of the world against anyone, and that is just the knowledge that an up-to-date Trade Commissioner needs. Who can be chosen for the other expert, we leave our readers to say. But the proposal made to nominate two commissioners, each a specialist in the lines proposed, and not a good all-round man on all, is, we feel sure, deserving of the most careful attention, no matter who are chosen to fill the posts.

WRITING from Cazanga, Portuguese South-West Africa, one of our subscribers expresses his gratification over the way we spoke of the coconut possibilities of Angola in our November issue. The publicity given would, it was hoped, encourage interest in that country, which is a promising one in several ways.

At the time of writing our correspondent said the rainy season had been but a poor one; in spite of this, however, their coconut nurseries had done splendidly, so that out of one batch of 10,000 nuts laid down in January-February, at least 80 per cent. germinations were expected. Meanwhile attention was being given to catch crops, and to further this, we were asked to send out what books were available on cotton-growing, bananas and tropical fruits generally and also on suger-cane culture. Unfortunately so many of the leading books are out of print and present costs of reprinting do not tempt publishers to issue fresh editions as they cannot get higher rates from the public, and so they must wait for a more reasonable scale of costs to exist over here.

After reading our articles on castor-oil planting, our friends have put down some acres to this crop, and the plants, they say, are doing well.

ACCORDING to the *Proceedings of the Trinidad Agricultural Society* for April, our old friends Messrs. Alexander Cross and Sons, Ltd., who are, we believe, as described in our Trinidad contemporary, the largest dealers in fertilizers in the world, have recently purchased from America 8,000 tons of a new preparation known as Ammas-phos, of which great things are prophesied. To begin with, it is free of all acids, and then, whilst prices of other grades of fertilizers are advancing, the cost of this preparation remains at its old price; it may be purchased per unit at a cheaper rate than other superphosphate or ammonia manures. The Japanese have also been large buyers, but when their contracts are completed, Messrs. Cross hope to secure further supplies. From reports to hand of the attempts being made to increase the outputs of rice, wheat, sugar and cotton, the demand for fertilizers is certain to be very heavy. It is only to be hoped that the supplies available and the transport needed to convey them to the tropics will be available as and when required.

The Proposed International Association to Advance and Safeguard the Vegetable Oil Industry.

News from Monrovia (Liberia).

Americans interested in vegetable oil seem disappointed at the rate of progress in Liberia, where apparently they hoped to have seen things hum, and they are not doing so. They (i.e., the Americans) greet the idea of an international association to regulate and increase the output of vegetable oils with enthusiasm, and feel that such a body could help Liberia in many ways. "Your idea is past fine," wrote one of the leading Americans over there, "the world surely needs such an institution; so many men have good ideas and bad methods, others have bad ideas and good men to carry them out. Your proposed institution should be able to put the good men and the good ideas together; if this could be done, then maybe we should see things go ahead with vegetable oil; at present they seem to have stuck so far as increased cultivation is concerned. Think of how many ex-service men want to go planting and do not know where to go and what to do. Such a proposal as you make would prove invaluable to these ex-warriors, so hurry up and get into working order for the end of the next war. If ever you come across O. W. Barrett's hundred most important vegetable oils and fats which he wrote, I believe, for an American concern, you should read it, but I believe it was never printed, so I doubt whether you will ever see it. If available, however, it would be useful as a text book for helping intending planters joining the Association. It is just the class of information that the public wants, semi-confidential and opening up ideas that they have not yet dreamed of."

Another writer from Liberia does not speak too hopefully of what is going on over there. Also an American he claims that they are still bad and Uncle Sam's millions (of dollars) are not having the effect that the lenders anticipated, though possibly the Liberians themselves are not so dissatisfied. Shiploads of palm-oil are rotting in the jungle, whilst natives on the coast may be starving. Agriculture is, without exaggeration, in a worse state to-day than it was twenty-five years ago. "Nobody at home," as we say in America. Things on all sides and throughout Liberia generally, he adds, are in such a state that I heard that O. W. Barrett, who came out to take charge of the Agricultural Department, as I think you pointed out at the time, is very disappointed, and quite sorry that he came here instead of going out East as expert on raw materials. The Orient is waking up and going to do big business—no one knows this better than Mr. Barrett. However, let's hope for the best.

Reports from up State indicate large crops in nearly all products, *Wileman's Review* tells us; the rice crop which is now being harvested is the largest in the history of the State. The total cotton crop will show a decrease compared with last year because of the policy adopted by most coffee growers not to plant cotton between the rows of coffee trees, but in the non-coffee-producing sections of the State its production shows a healthy increase. Prediction for a crop of about 8,000,000 bags of coffee still appear to be accurate. The yield of beans, sugar and castor beans is reported to be normal.

What are the French Potash Societies Doing?

The reports to hand that Germany, not satisfied with her own potash deposits at Stassfurt, is to have the monopoly of exploiting potash deposits in Spain, have revived queries as to whether France is doing anything to encourage an export trade in her Alsatian potash mines, or whether they have adopted a *laissez-faire* attitude and are waiting for buyers to come and beg for this much needed fertilizer.

On this point we have been unable to give any information. If the French Society is bestirring itself to sell potash against Germany, we have neither seen nor heard any signs of it. We had more experience than most folks outside the German ring of how the old Kalisyndicat worked its sales, and must say that, compared with the lifeless attitude of the French Company so far, the German interests were far more deserving of support than the French are to-day. This is much to be regretted since, given men trained to propaganda work, with push and knowledge of the tropical trade, the Alsatian deposits have a brilliant future before them. If, however, they continue for another year to do as they have done during the past twelve months, they will never be able to compete against the aggressive German, who, as soon as he has made his bargain with the Allies and has no further need to pretend his claws are cut, will go ahead with his export potash trade with renewed vigour and redoubled exertions.

Those who want to get into touch with the French Society may be glad to have their various addresses. Whether it is any good writing to any of them is more than we can say.

In London the head office is at 54, Gresham Street, E.C.2, whilst they have, we believe, sample rooms at 64, Wood Street, E.C.2. In Paris they are to be found at 3, Place de la Madeleine; at Strasbourg, 26, Avenue de la Marseillaise; at Mulhouse, 10, Rue des Orphelins, and in Luxembourg at 11, Rue Aldringer. When agencies and propaganda centres will be opened up in the Tropics we cannot say, but it is high time a start were made to do so. As close students of the German methods on this matter from 1905-1915, we are justified in saying this, and out of goodwill to the non-German element in Europe to add, if you wish to beat the wily German at his special game of potash selling, do not go to sleep in an office where but few know where to find you and no one knows whether you wish to sell potash for export to the Tropics or not.

The Jamaica Legislature, the *Times* Trade Supplement tells us, has voted a sum of money to defray the cost of experiments in the manufacture of condensed milk in the colony. It is proposed to import a model plant. Preliminary tests by the Department of Agriculture in the island in the treatment of elements used in the manufacture of condensed milk have been successful. We hope that other centres in the tropics will take note of the above, as there must be several centres which can follow Jamaica's lead in this way.

Rubber Notes.

LIVERPOOL on July 9th reported a quiet market for Pará, with Hard Fine at 1s. 11½d. only, against 2s. 1d. for Soft Fine, and 1s. 5½d. for Caucho Ball. Scrappy negroheads are put at 1s. 6d. per lb. Things up the Amazon must be pretty "bleak" now that their rubber is below 2s. in London, whilst the prices of all food-stuffs and necessities of life are so many times dearer than before the war. This makes it all the more wonderful and difficult to realize how and why the Brazilian authorities, both in Amazonas as well as the Federal Government down in Rio, do not take this opportunity, at the time of all ages, to encourage the production of local food supplies and so establish the nucleus of a future stability to the extraction of Amazon rubber, as such a chance will never come their way to do so again as now, when the price of rubber is so low and of everything that the tappers need and could produce locally up the Amazon is so high and scarce.

EVEN men just home from Malaya are troubled over exchange (although it is tending to become less aggressively back-breaking) and food supplies, especially rice, which is not. One hears constant complaints of coolies, especially Chinese, leaving Malaya because the net revenue to the said coolie there is less than what they get elsewhere. If, therefore, two coolies leave to only one new arrival, what will happen when the rush comes, as it will probably do just when no one is prepared for it? How many coolies are needed to the acre cleared as well as planted? Is it three? and what percentage, taking all districts—good, bad, and indifferent—has to be knocked off the labour force for sickness, shuffling, &c.? Is it 20, 25, or 30 per cent.? Those on the spot know best. All the time the war has been on things have gone "lean" with estates and their trees; of that we are sure. Some may be overtapped, others diseased. Like the coolies themselves, we who are not directors cannot say what percentage of the magnificent army of trees—on paper—will have to be knocked off as useless or dead. As with a coconut estate we know of, from which an estimated yield of a million nuts turned out to be under 400,000, to the surprise of the directors, even the directors over here have to learn exactly what to expect from their acres, from their trees, and from their labour during the next four, five, or ten years, when consumption will be running up by leaps and bounds. The surprise that some folks will experience if ever they see who is and who is not to go to heaven some day (as we are told) will not be greater, we fancy, than the surprise of the world ten years hence when it calls on Malaya to "just pour out its milk" like mineral oil through a pipe-line, only to find that anyone can turn on the tap, but—no one can continue the flow if the milk is not there to feed all.

THE rest of these notes have been torn up, whilst some with an illustration of the Chemistry Department of the Research Association of British Rubber and Tyre Manufacturers (at University College, Gower Street, W.C., which we discussed last month under the photograph of Mr. Porritt (p. 88), the Director of the Department) has been held over for a future issue. This is because, in face of what we have stated in the above paragraph, we feel bound to reproduce the following extracts from a special circular (No. 23) issued by Messrs. Zorn and Leigh-Hunt, the well-known rubber share brokers of 3 and 4, Great Winchester Street, E.C.2, on "The Coming Rubber Shortage," in which we are told:—

The extraordinarily rapid spread of mechanical traction throughout the world has, as is well-known, during recent years brought an enormous demand for rubber tyres, in all parts of the world. In fact, although rubber enters into the manufacture of perhaps 30,000 different articles, quite two-thirds of the world's production of rubber is absorbed by the tyre industry; and the demand from this direction is steadily increasing year by year. Even in the United States, where the motor industry has developed by leaps and bounds, the demand continues to show remarkable expansion, while in countries which have more recently adopted mechanical traction the sales of passenger cars and goods lorries are limited only by the capacity of manufacturers to supply them. According to Colonel S. P. Colt, President of the United States Rubber Company, the demand for tyres is so insistent that if it were possible to increase the 1920 production of American manufacturers by 50 per cent. there would be no difficulty in disposing of the whole output.

To illustrate the growth of the motor industry in America from the small beginning made twenty years ago, the following figures may be quoted showing the number of cars made in that country in various years:—

AMERICAN OUTPUT OF NEW CARS (PASSENGER AND TRANSPORT).

	Total	Value in dollars
1899 ...	— ...	3,700
1904 ...	21,692 ...	30,804,000
1909 ...	130,986 ...	165,148,000
1914 ...	569,054 ...	458,957,000
1916 ...	1,583,617 ...	954,969,000
1917 ...	1,868,949 ...	1,274,488,000
1918* ...	1,223,638 ...	1,236,106,000
1919 ...	I,974,016 ...	1,885,112,000

* Production restricted by the United States Government.

Manufacturers' estimates for 1920 production amount to 2,000,000 cars, of which about 1,600,000 will be passenger cars and about 400,000 lorries. Whether these figures can be reached depends upon labour and transport conditions and upon the supply of cotton. About 7,000,000 cars are at present in use throughout the United States, and the number has been increasing at the rate of 1,000,000 cars per annum.

"Now let us discuss production. A margin of safety in the total acreage now bearing (2,450,000 acres), as well as of the probable total in 1924, 700,000, or 3,150,000 acres in all, is provided by the fact that considerable areas of the earliest plantings in the Malay States were so badly damaged in the early days of pioneer tapping that re-planting of these areas is necessary. A large portion of the acreage

owned by Chinese and native planters, too, has been so drastically tapped that its future yielding capacity will certainly be well below that of British-owned properties. The figures given may, therefore, be regarded as a moderate statement of the position; and emphasis may fairly be laid on the important point that while the area of rubber that reached the bearing stage in the three war years 1915-16-17 alone increased the tappable acreage by over a million areas, the area to come into bearing in the next three years (1921-22-23) is less than half that total." This is very much what we have claimed in our second paragraph.

During the past five years the production and consumption of rubber have increased at the average rate of about 50,000 tons per annum. But in the opinion of those best able to judge no such increases can be expected after 1920. Estimates of future production prepared by one of the highest authorities on the plantation industry quoted below fully support this view:—

ESTIMATED FUTURE PRODUCTION.

	Plantation Tons	Wild Tons	Total Tons	Increase Tons
1920	360,000	40,000	400,000	...
1921	381,000	40,000	421,000	21,000
1922	403,000	40,000	443,000	22,000
1923	430,000	40,000	470,000	27,000

This year, while Continental trade has been stagnant and monetary conditions throughout the world have been abnormal, it is a matter for congratulation that the last of the big annual increases in the plantation crop is being so readily digested.

PERHAPS a few figures may here be quoted to show the remarkable regularity with which the use of the motor car in the United States has developed:—

AMERICAN MOTOR VEHICLE REGISTRATIONS.

	Cars
1913	1,254,971
1914	1,711,339
1915	2,445,664
1916	3,512,996
1917	4,983,340
1918	6,146,617

Official figures for 1919 are not yet available, but the number of registrations is believed to have reached 7,000,000, and the leading American trade journal boasts, in pointing to the enormous field still open to the industry, that the number of cars in use in the whole world outside the United States does not exceed a million.

To summarize the position, it will be noticed from the above statistics that for the next three years the increase in the world's production of rubber is not likely to exceed 6 per cent. or 7 per cent. per annum. For the past five years the manufacturing demand has absorbed increases averaging more than 25 per cent. per annum. Even if during 1921-23 the rate of increasing demand should drop to 5 per cent. per annum, the world's output will be fully used up. If the rate increases at anything *more* than 5 per cent. we must inevitably reach a period of actual shortage. For instance, supposing that the average increase of the last five years should be cut down to one-half (12½ per cent. instead of 25 per cent.) we might by the end of 1921 be faced with a shortage of 30,000 tons of rubber, to be followed by another two years' increasing stringency. The effect of an approaching shortage will make itself felt in the market some time before the position actually arises, as far-sighted consumers of rubber will not quietly wait to be "caught short." This no doubt explains why it is possible to-day to sell large quantities of rubber for a couple of years ahead at a substantial premium over the "spot" price; forward contracts, in fact, have this year been made up to 2s. 10½d. per lb. for delivery in 1921. In a word, in the absence of a set-back in the trade of the world, there is practically no risk of rubber falling below its present price (except as a temporary fluctuation) while the chances of a rise are almost startling, in view of the statistical position revealed.

We may not all agree with a detail here and there, but in the main those who best know the rubber industry from within must feel that there is reason for Messrs. Zorn and Leigh-Hunt's warning. One wonders whether anyone will do for vegetable oils and cacao what this firm has done and is trying to do for rubber.

WITH regard to prices July opened with a steady market, only it would have been more satisfactory if the level had been about 30 per cent. higher. By July 8th a rise was apparent of about a penny, but before a week had passed this was almost lost, and when the reports appeared in mid-July there was a fall of a penny, making twopence difference in a fortnight. Here are the values according to Messrs. Lloyd, Matheson and Carritt:—

	1920 July 1st.	1920 8th.	1920 15th.	1919 15th.
	s. d.	s. d.	s. d.	s. d.
Smoked sheet (F.A.Q.)	1 10½	1 10¾	1 9½	1 9¼
Crêpe (standard quality)	1 11¼	1 11¾	1 10¾	1 11
Parà (hard fine)	1 11½	2 0	1 11	2 5¼

By July 19th, No. 1 crêpe had gone back to 1s. 10¾d., but smoked sheet was only 1s. 9¼d. for Standard quality, against 1s. 11d. for hard fine.

Forward positions—	Smoked Sheet s. d.	Crepe s. d.
1920, July..	1 9½	1 10¾
,, September	1 10½	1 11½
,, October—December	1 11¾	2 0¾
1921, January—June	2 1¾	2 2½

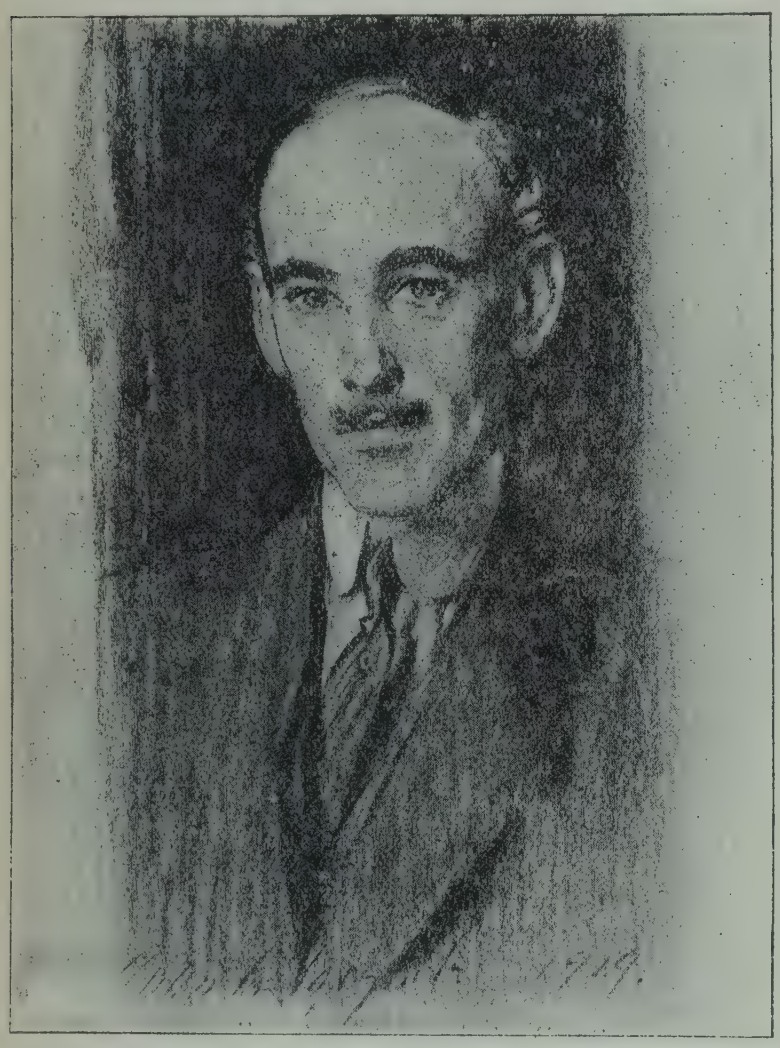
Stocks—		Tons		Tons
Plantation, London	July 10th, 1920,	23,189	July 1st, 1919,	25,275
Parà, Liverpool	,, 1st, ,,	1,000	,, ,,	1,200
	Total	24,189	Total	26,475

IN a striking article on "Cotton Growing in South America" which Mr. George McCutcheon McBride recently contributed to the *Geographical Review* of New York, he tells us that "the landward limit of the cotton belt of north-eastern Brazil is fixed more by accessibility to markets than by climate, since general meteorological conditions vary but little over the Brazilian plateau. The best descriptions of the climate of Brazil are contained in Dr. C. M. D. de Carvalho's 'Metéorologie du Brésil,' published in London, by Messrs. Bale, Ltd. in 1917, price 25s. net, or post free 26s. 6d., and reviewed in the *Geographical Review*, vol. 4, p. 411, of 1917."

Lord Milner on Tropical Development.

The Secretary of State for the Colonies at Sir Edward Davson's "At Home" on July 6th.

By no means an unimportant link in the chain of Empire trade and development was completed on the afternoon of July 6th, when the President of the Federated Chambers of Commerce of the West Indies (Sir Edward Davson) was "At Home" at Claridge's Hotel to a company, many of whom have played a useful and distinguished part in helping to form the link. The Secretary of the State for the Colonies (Lord Milner) was the principal guest, and chatted in a friendly and quite unofficial manner with those present. Some whom he had not met before, including the Editor of Tropical Life, were introduced by Sir Edward Davson. Everyone spent a busy, as well as an enjoyable time, chatting over events that had happened, grave and gay, since they last met, mostly before the war.



[*After Sargent.*

Sir Edward Davson,

President of the Associated Chambers of Commerce of the British West Indies and owner of the tanned but very alert face with the "big voice" on the top of the slender figure.

Mr. A. E. Aspinall, C.M.G., was there, fresh from his run round the West Indies and his return journey, *via* New York, in company with his host for the afternoon. In current issues of the *West Indian Committee Circular*, Mr. Algernon is giving an interesting account of his journey under the heading of "The West Indies Revisited." We wanted to discuss the question of agricultural colleges with Sir Norman Lamont, but did not happen to hit off a suitable moment to do so. We had a long chat, however, with Sir Henry Alcazar, K.C., who in 1890-91 and again in 1895-98 taught us a good deal of what we now claim to know on West Indian politics and administration. We were pleased to see Mr. William Fawcett looking well in spite of his close literary work at the British Museum.

The "At Home" was a great social success no doubt; it certainly was an extremely useful function to everyone, including, we feel sure, Lord Milner himself, from an Imperial point of view. As a Minister of the Crown to-day and as an official in the past, we all know that Lord Milner gets things done. On this occasion also, we are sure, equally useful work will result, for he must have picked up much information first hand from those well able to give it, all of which no doubt will be concentrated and utilized later on.

We discussed cotton-growing generally and sugar production in the West Indies, especially Trinidad. As an outcome of this conversation we sent Lord Milner a copy of "How to Pay for the War by Developing the Resources of the Empire" and also of "The High Price of Sugar." It would be interesting to know what he thinks of them. He very rightly claimed, when writing to us, "That the only way to pay for the war is by increased production, and especially by the development of our Overseas estate. I quite agree that it is one thing to lay this down as an indubitable principle, and another to determine in what order the development of our Imperial resources should be taken. If your book throws light —as I have no doubt it does—on this crucial point, I shall certainly be very glad to profit by its guidance."

Not the least useful part of such a function is the publicity it attracts through the Press to the Tropics, their administration and development, including the question of education, of increased sugar and cotton production, and even of the laggard consumption of cacao and rubber, owing to the insufficient outputs of the first two crops, which are needed, the first for chocolate, and the second for tyre fabrics.

Sir Edward Davson, the "big voice" of the British West Indies, said one paper, held a reception at Claridge's yesterday for British West Indians in London. Lord Milner, the Colonial Secretary, was the chief guest, and Sir Edward informs me that the islands have never before been paid that honour. Sir Edward Davson, a slender figure with a tanned face —like most of his guests—is the live wire of the colony. Five years ago he founded an association of West Indian Chambers of Commerce, which deals not only with tariffs, telegraphs and trade, but with health and labour questions. Several conferences for the extension of trade with Canada and other parts of the Empire have recently been held.

Then the *Times*, speaking rather from the social side, told us that Lady Emmott acted as hostess and about 250 guests attended. Among those who accepted invitations were: The Archbishop of the West Indies, the Earl and Countess of Lisburne, Viscount and Viscountess Barrington, Lord and Lady Emmott, Lord Southwark, Sir Norman Lamont, Sir William

and Lady Trollope, Sir Frank and Lady Newnes, Sir David Prain, Sir Thomas and Lady Horridge, Sir Owen Philipps, M.P., and Lady Philipps, General Sir Frederick and Lady Robb, Sir John Norton Griffiths, Rear-Admiral Sir John Parry, Sir Charles Lucas, Sir George Fiddes, Sir Herbert and Lady Read, Sir Frederick and Lady Hodgson, Sir William and Lady Grey-Wilson, General Sir William Manning, Sir Gerald Strickland, Sir Sydney Olivier, Sir Walter and Lady Egerton, Sir William and Lady Clark, Lady Ramsay, Sir George Bettesworth Piggott, Sir Robert and Lady Fulton, Sir Harry Wilson, Sir Charles McLeod, Sir Roper Parkington, the Bishop of Barbados, Sir Clement and Lady Kinloch-Cooke, Sir Thomas and Lady Polson, Sir W. K. and Lady Chandler, Sir Henry and Lady Alcazar, Sir Henry and Lady Buckingham, Colonel Pretyman-Newman, M.P., and Mrs. Pretyman-Newman, The Bishops of Antigua and Honduras, &c.

Uganda and its Post-war Development.

Quite a number of our readers are off to Nairobi, Uganda and elsewhere *via* Mombasa to plant (if circumstances permit) cotton, sugar, wattle or rubber, whilst some talk of sisal, and others of coffee and cattle. In one or two cases the men (all ex-officers) must wait for a berth, but those who have gone are (in one or more cases) to have a six months' course at a Government training station first, during which period they can also become acquainted with the lands they have secured, and can, at the same time, be in a better position to decide which crops are most likely to succeed on their own estates.

Most of them have studied the paper on Uganda, read by Mr. Robert Coryndon (who has been Governor out there since 1917) before the Fellows of the Royal Colonial Institute. If we remember rightly, Sir Robert told those present that the area under coffee was about 21,500 acres, with a crop of about 54,000 cwts., whilst 12,250 acres were under (Hevea) rubber, of which over 250,000 lb. were exported. Great things are expected of cotton, estimates running from forty to sixty thousand bales. These are present or recent outputs; what will be interesting to note as time goes by, five and ten years ahead, will be the increased areas taken up by these ex-warriors, and to note which crops they produce and what yield per acre they secure. Whoever they are, and whatever they plant, we wish them all, as we had the pleasure of doing personally to some, the best of luck.

Two papers that give much useful information of current progress of these areas are the *Leader* of Nairobi (which runs and supplies, we believe, a special "letter" for those not on the spot) and the *Beira News* of Beira. Then, of course, there is the Uganda Planters' Association, with Dr. H. H. Hunter (co-author with Mr. E. Brown of Kivuvu, of the book on planting in Uganda) as its Vice-President—at least, he was so in 1915. This useful Association was formed in July, 1910, so is approaching its tenth birthday. Their 1915 report included an account of the farewell dinner to Mr. M. T. Dawe, who left them in 1910, for Mozambique just after the Association was formed.

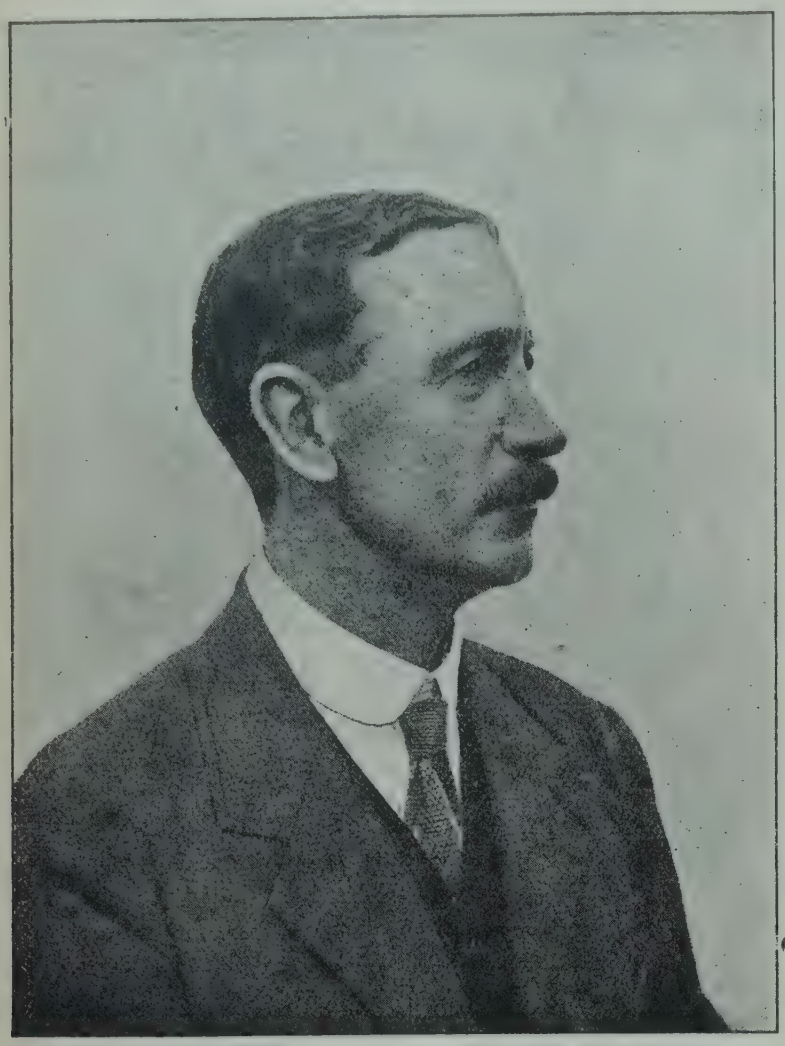
"Tropical Life" at the Play.

We never remember seeing Drury Lane looking better than on the first Monday of the new play, "The Garden of Allah," founded on the well-known novel of that name. The least-favoured night of the week found the old playhouse packed—and not with a "paper" audience. Appreciation of the trouble taken to put on the play beyond criticism marked the progress of the play throughout. The audience showed a genuine and spontaneous appreciation of everything, the fascinating scenery, the correctness of the costumes, also the behaviour of the flocks and herds, including the baby camel, and last but not least, of the play and the players. At times they were undoubtedly in a dilemna, as they wanted to applaud an extra attractive effect, but checked themselves from doing so lest they should disturb the play itself.

Miss Madge Titheradge as Domini and Mr. Godfrey Tearle as Boris Androvsky, the trappist monk who broke bounds and then went back to them, were splendid. Of course we expected nothing less of Miss Titheradge, but with Mr. Tearle we did not give him credit for being so finished an actor in so difficult a rôle. The play has much, so very much in it. The supremacy of the Roman Catholic Church even to the sanctity of marriage. The Catholic wife, about to become a mother, was the one who sent Boris back to the monastery where, as Father Antoine, he had met Count Anteoni (Mr. Basil Gill), the mystic and wanderer, in whose Garden of Allah all the characters meet and started to weave their net, not forgetting a most admirable Father Roubier in the person of Mr. Arthur Lewis. If the play has a fault it is that, like the desert which it so wonderfully depicts, once you have met it, you are bound to feel restless and dissatisfied until you see it again.

Then we went, as a contrast, to the London Hippodrome to see the Dolly Sisters in the famous Pony Trot with Laddie Cliff as their driver. It was very good, so was the rest of Mr. Albert de Courville's revue "Jig-saw." We spent a most enjoyable evening, first in The Lingerie Shop with Daphne Pollard, Nancy Gibbs and Laddie Cliff, then in the Perfumery Department with a host of live scents. We also liked the hat-trimming scene, however, with the Dolly Sisters and Nancy Gibbs, whilst Stanley Lupino and Ben Welsh were very funny in "Three Chances," and so were the Dooley Brothers in "Strolling Down the Avenue" and with the Dolly Sisters in the final scene "Carnival." "Limehouse Nights," with the two Dollies, met with much approval. The music is as bright as the acting and as pleasing to think of as the set-up of the scenery and play generally.

Miss Irene Vanbrugh as Olivia in Mr. A. A. Milne's comedy, "Mr. Pim Passes By," continues to draw full audiences to the Playhouse. This is only natural, the plot being attractive and homely, and cast entirely satisfactory. Mr. Ben Webster as Olivia's husband, George Marsden with Miss Sybil Hook as his niece, and Miss Griffies as the Aunt, help to make the play a success, and then there is Mr. Pim, Carraway Pim (Mr. Spencer Trevor), well meaning but decidedly meddlesome. Mr. Trevor acts such a character to perfection.



[*Reproduced from the Agricultural Journal of India.*

"Tropical Life" Friend.—No. 181.

DR. C. A. BARBER, D.Sc., F.L.S., C.I.E.

The Sugar-cane Expert.

WHEN the history of the sugar-cane industry in India comes to be written (whether the juice from the cane ultimately goes to make gûr, jaggery or sugar does not matter in this case) Dr. Barber's name will, we should imagine, figure prominently among the list of those who have brought the cultivation of sugar-cane to what it is to-day, where it now remains for others to carry it on to a state of perfection in quality and yield of sugar, which we all desire to see come about in India. May we all be here to see it. India has produced, according to printed returns, 3,300,000 tons of gûr. When it produces 4,000,000 tons of real sugar we should like to celebrate the event by inviting Dr. Barber to dinner and, with the help of a few others of the many who have helped, to toast "Our Friend" for his part in bringing about such a success —a success, we feel sure, that will come later on. It would be like celebrating a silver wedding, and an output of 5,000,000 tons of sugar, even if it is only gûr (and, by the way, as stated elsewhere, our present high prices have enticed even gûr from India to our shores), could well be compared to India's golden wedding with sugar. That may not come in our time, or if it did there would surely be such rejoicings that —we will change the subject.

Those who study the *Madras Mail* as we do, must allow that it has all along done good work in supporting Dr. Barber in his efforts to push on sugar-cane cultivation in India. When those at a distance try to egg on a country to go ahead, as we have done with India, because of our anxiety for the British Empire to win the race of the world's sugar output, you may at times shout too loudly or at the wrong moment to the runner to hurry him up. We do not feel that we have ever done so, but it may be that both Dr. Barber and the *Madras Mail* feel that we have done so once or twice.

The letters which we have received from Dr. Barber, and the articles published by the *Madras Mail* on Sugar Production in India, have been a great help to us and, the latter at least, since they are there for all to read, must be a help to others as well. The Southern Indian paper always supports Dr. Barber, and those who wish to see what it has to say should turn to its issues of June 3rd (p. 598) to April 8th of this year and to March 27th last year, and study what has been written by those who are on the spot. Here we are told that Dr. Barber's article in the *Times* last August (see TROPICAL LIFE for December, 1919, and February, 1920) was timely, and that their (*Madras Mail's*) comment last April "was an attempt to hold the balance equal between our optimism (embodied in the 'High Price of Sugar') and what appeared to be the pessimism of Dr. Barber. We say 'what appeared to be' advisedly, because Dr. Barber is certainly no pessimist on the subject."

We endorse the remarks made by the *Agricultural Journal of India* (from whose portrait of Dr. Barber, it will be noted that we have reproduced our own), when it said that by the retirement of Dr. Barber the Indian Government loses one of its most distinguished members; in the past he was as keen at athletics as he was at science.

Born on November 10th, 1860, in South Africa, Dr. Barber was educated in England, took honours and his first B.Sc. at London University, and went, in 1883, to study science at Heidelberg, subsequently entering Bonn University for a year.

In 1898 "Our Friend" was appointed as Government Botanist, Madras, and in 1912 he was appointed sugar-cane expert for the whole of India (from 1891-95 he was engaged in sugar-cane and other work in the West Indies), and started the cane-breeding station at Coimbatore.

When we started forth to preach the gospel of more sugar in India, we never thought that we should prove to be sufficiently important to have "drawn" Dr. Barber, the *Madras Mail* and others in the way we have done. We say this because, whatever difference may exist between the views expressed on India's ability to speed-up her production of sugar, the letters and articles published about our views, and especially those of Dr. Barber and the *Madras Mail*, have done much to draw the attention of leading men to the subject in a way that will never allow the question of India and her sugar output to be pigeon-holed again. The start for an increased output has actually been made, and we wish all success to the runners. When success is well on the road there, as stated in the opening lines of these notes, the names of Dr. Barber and the *Madras Mail* must always be remembered with gratitude by those who will benefit, both as producers and consumers, by these increased supplies of sugar. Would that "we" had a little on account at the moment of writing, even a few pounds, leaving those four or five million tons until later on.

Business Notices.

1.—The address of Tropical Life is Messrs. Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.

2.—All **literary communications** should be addressed **to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

3.—All **business communications and payments**, either for subscriptions or advertisements, should be sent **to the Publishers** of Tropical Life. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

4.—The Subscription, which is **Ten Shillings** per annum, may commence at any time, and is payable in advance. Life Subscription, £5.

5.—The Advertisement Department is at 112, Fenchurch Street, E.C., where all inquiries respecting advertisements, charges, &c., should be addressed c/o the Manager of the Department. At the same time will advertisers kindly note that all copy and blocks for advertisements must be sent to 112, Fenchurch Street, E.C., before the thirteenth of each month, failing which, insertion of same in current month cannot be guaranteed.

6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Advertisers are only entitled to three changes of matter in the year of twelve issues, unless (1) they send electros for insertion, or (2) are willing to pay for the cost of setting up the advertisement. Owing to present high cost of composition and printing work we cannot depart from this rule.

8.—Changes of address should be promptly notified.

9.—Non-receipt of copies of the Journal should be notified to the Publishers.

10.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

July, 1920.

The U.K. and Sugar Production in India.

We note, says the *Louisiana Planter* of June 5th, that in our reports from the Clyde, Messrs. William Connal and Co. report the arrivals at Glasgow of the common brown East India sugar, known as "gur" or "jaggery," which sold at about one-third the price of white sugar, on an assumed test of 84 per cent. sucrose. These are the sugars of which India produces between two and three million tons, and there has been a disposition among some of our scientific friends to argue that the East Indian is incorrigible and will not engage in a higher order of sugar production, and as stated, except in isolated cases, these sugars rarely ever go out into the markets of the world. This assumption is a fact, but similar conditions prevailed a few years after the Civil War, and East Indian sugars reached the markets of the Western world at that time. As East India is the natural source of sugar supply for Great Britain, it would seem that the Hindus are not human if they won't yield up some of their favourite articles when the prices get high enough to suit them. They will be sure to do it, and we think we may live long enough to see quite a revulsion in English public opinion as to the capacity of British India to supply Great Britain's sugar wants, without her again appealing to Germany, as Great Britain has done for a generation past.

We are glad to see the above. The *Louisiana Planter* does know sugar and sugar-producing centres. What is said above, and what we hear from India itself more than confirms all we have ever claimed of India's ability to ease the sugar shortage and enable Europe, in fact anywhere outside America (which is asking for 5,000,000 tons) and India (which needs another 3,000,000), to receive more sugar during 1920-1921-1922, or if not in 1920-21, then let us hope in 1921-22. The pinch for sugar from next October, and especially in 1921, is bound to be severe; naturally, therefore, we involuntarily "egg on" competing centres each to go one better than the other in the quantity of their output. As stated in the notes under "Our Friend" this month, India has done well under the guidance of Dr. Barber and others in the field and of the *Madras Mail* and other papers in what they have to say of the progress already made and the possibilities to come. We trust that we also will, in the end, help and not hinder this good work. The three important articles on the subject (see p. 104) that our optimism has drawn from the *Madras Mail*, are in themselves, we consider, alone worth all the time, trouble and money we have thrown into the fire to help warm up India's desire to produce more cane to the acre planted and more juice and sugar per ton of cane crushed in the mill. All this will come and is coming in fact, of that we feel sure. All the more thanks to those who have helped to bring India to the stage she has reached. We don't mean to see her stop there. We may differ with some on this point, but for all that we will not rest content until India has at least doubled her average sugar output for the last five crops.

The *Mysore Economic Journal*, whose help in the matter has also been weighty and continuous, seems to agree with us, that whatever India has done in the past in the way of sugar there is no reason that she should not do as much and more in the future. Instead of resting on her laurels, she must only regard them as an additional incentive to do still better. We have often referred to the important part that the *Mysore Economic Journal* has already played in urging men to push on with sugar production and are glad to know that this useful work is still to be carried on.

"I think your campaign for increasing sugar production in India," the *Mysore Journal* wrote to us last month, "is doing good. Messrs. Tata have just issued the prospectus for a big sugar corporation in India with a capital of 5 crores of rupees. I shall be greatly surprised if this issue is not over subscribed. In any case events so far show the great belief people have in sugar production in India. In our own State of

Mysore we are doing our best, and so it is elsewhere in India. Pessimists, therefore, ought to beware what they say regarding India's ability, or rather her inability, to produce sugar, or that the condition of her soil is such that the present production cannot be increased."

In this game of whist with sugar production in India as the cards, the honours so far, we consider, are easy. Whether Dr. Barber or those who agree with him are correct in their cautious estimates, or whether we are with our more optimistic hopes, does not matter so long as India goes ahead. We are of opinion that with the lead given by Messrs. Tata she will progress and become a larger producer of sugar and of other crops as well. We believe that the Tata Sugar Company was subscribed for several times over, five or seven times. This shows, of course, that the public have great confidence in the Tatas, but it also shows that the Tatas have great faith in India as a producing centre, and what is good enough for that firm is good enough for anyone. "Hear, hear!" say the investors, and subscribe according. An ounce of fact is worth a ton of theory. Here are Rs. 5,00,00,000 of facts of which 300,000 shares (Rs. 50 each) have just been issued, and so now we claim that those who would like to say that we who have never been to India are mere theorists, must allow that those who live in India are as keen and keener believers in India's ability to produce sugar than we consider ourselves to be.

Let us consider one or two details. The Tata prospectus proposes to establish gûr or jaggery factories in tracts where from 500 to 1,000 acres of cane are likely to be available, and to place sugar mills (to make sugar that is, not gûr) in areas where anything over 2,000 acres of cane can be initially relied upon. Like others, they have realized that the cultivation of sugar cane and the manufacture of sugar yield most satisfactory results when the scale of operation is very large.

All this goes to form one of the chief lessons in our book, "The High Price of Sugar" (price 1s. 3d. post free), where we urge intensive cultivation rather than extensive areas. We do so because then the mills, which we all know to-day must be large, do not have to send miles across country for the canes. If you do, you lose more in transport than you save in running the big mill.

Then comes a paragraph that could have been lifted bodily out of our book, and so goes to clinch our arguments. "There are roughly 3,000,000 acres of land under sugar-cane in India, yielding about 3,500,000 tons of gûr, equivalent, at the outside, to 2,500,000 tons of sugar. That is to say, India produces considerably less than one ton of sugar per acre of cane cultivation, whilst in Java, by the application of methods which the Corporation proposes to adopt, the yield of cane has been increased from under two tons to over four tons per acre. In 1913-4 the imports were only just short of 900,000 tons, worth even then £11 a ton"; but what would such sugar be worth to-day? We in London, at any rate, are talking of 1s. 9d. per lb., whilst Uncle Sam is stated to be saying that he will have 102 lb. per head, even if he pays 60 cts. (2s. 6d.) per lb. for it. Surely in face of such prospects India can and will produce sugar as well as gûr or jaggery and be able to leave even Cuba's output behind.

The need of adopting intensive methods in India or Cuba need not, and in fact must not deter the central factories from making full use of the cane farmer, be he large or small. On the contrary, he will be as great a help, perhaps of more help to a scheme like that of the Tata Sugar Corporation than he has even proved in Bohemia, now known as Czecho-Slovakia.

There, in spite of the war, in the absence of fertilizers, of transport and of coal, in spite of the great storm of October 26th, 1919, things are going ahead with sugar, thanks to the help of the many small men coupled with that of the big ones. The 186 sugar factories in Czecho-Slovakia (which includes Bohemia, Moravia, Silesia and Slovakia), the *Louisiana Planter* tells us, produce 90 per cent. of their own beets, and purchase the balance from beet-growers or farmers around. In Bohemia there seem but few of such (nearly) self-supporting factories, for we are told there some at least of the factories purchase all their beets on contracts, one of them having contracts with as many as two thousand small beet-growers. How suitable for India, so far as the size of the producers' holdings is concerned. Thinking of this is why, last month (p. 84) we asked: "Whether substantial areas throughout India could not be planted with sugar-beet for conversion into sugar," as well as other areas planted to cane?

Even in America, the *Louisiana Planter* tells us, there is a plantation on Lake Tasse, near Bayou Teche, on which the central factory receives cane from 700 different cane-farmers around. Beet or cane makes no difference, it pays the small man to feed the big factory ,and it pays the big factory to be fed in this way, whether it grows part of its grindings itself or not. Take Moravia again, which is compared to France with its small holdings by individual farmers. Here are fourteen stock companies of which the shareholders are chiefly beet-growers, an excellent plan for the East to follow, especially with a Gibraltar-like firm as Messrs. Tata to work with (whether to make sugar, vegetable oil or anything else, and those who know the Tata concern are well aware of what its subsidiary concerns are doing and can do). These beet-farmers in Moravia have bound themselves to furnish a fixed quantity of beets annually in proportion to each share of the stock held by them, whilst further supplies—about 50 per cent. of the total—are being obtained from non-shareholders.

In face of the above we hope to hear more of India as a sugar (not gûr) producing country on an increasingly expansive scale. In our leader next month we shall return to the subject.

WE like the tone of the leading article published by the *Madras Mail* (see their weekly issue of December 4th, p. 593) on "America and the Indian Trade," especially the end, saying: "So far as the old German element in our trade is replaced by American, the development will be to the good. But if it is to the advantage of the Americans to make a bold bid for the extension of their trade, surely it is equally to the advantage of the English and Indian communities to do so, and by this means we shall also forge for our-

selves the most potent weapon with which to meet the foreign trade invasion when it comes." This being so, what about the sugar industry of India? The *Madras Mail* itself practically asks the same query. "In a Calcutta contemporary," it told us, "it was stated that the circle of American financiers known as the Pierpont Morgan group has cast covetous eyes on India, but had been checked by the Government of India's rules prohibiting the employment of foreign capital to exploit the country. The American scheme was apparently to open up a whole new series of tea gardens in Assam and simultaneously to take in hand the sugar industry which they believe capable of infinite expansion.* We do not want America to start planting sugar in India any more than to plant rubber in Malaya. "Big money" would come to us if we were to develop the resources of India, especially her sugar lands (beet as well as cane) and knowing this is why we published the two books mentioned in the footnote. Now that America has shown confidence in India as a producer of sugar, perhaps capitalists in India and over here will have equal faith in some portion of that Empire being able *both* to make India self-supporting as a sugar producer and even to have a margin over for export later on.

WE are glad to hear that progress is being made with the Bill to enforce wandering husbands (also we hope, later on, unmarried husbands) throughout the Empire, when they can be traced, to carry out the conditions imposed upon them by maintenance orders issued by the courts on this side. The number of such men has increased considerably on account of the war, but even then the percentage is small. It is, however, a disease that is contagious and given to spreading, so the sooner it is recognised by all the Dominions and Colonies as dangerous and a pest to be checked the better for everyone. As the Nairobi Leader says, "men must be taught that women are not mere playthings to be petted into marriage and deserted after."

THE Spanish Supplement of the *Times*, which appeared on July 10th, this time with a number of illustrations, had a useful article on "The Improvement of Pasture Lands" (Mejoramento de las Praderas) and the importance of nitrogen to help bring this about. Other contributors discussed the raising of hogs, and the cultivation of maize will prove very useful in Spanish America or among agriculturists in Europe. An illustrated article on Glasgow and the Clyde occupies the place of honour. Both the subject and the way it is treated entitles it to that position.

WE are glad to see that Mr. J. H. Batty (known to most of our readers in connection with Messrs. Millers and Swanzy), Chairman of the African and Eastern Trade Corporation and also of Messrs. A. J. Caley and Son, the chocolate, &c., makers, of Norwich, has been adopted as the Liberal Coalition Candidate for South Norfolk, in place of Mr. W. H. Cozens-Hardy, raised to the peerage. He has a strong opponent in Mr. C. H. Roberts, ex-Chairman of the Putumayo Inquiry Commission and some time Under-Secretary of State for India. Both are good men, but the commercial interests of the Tropics will be the better for having a man like Mr. Batty in the House of Commons. We hope, therefore, he will be elected. If this is to be, he can do good work with Mr. G. A. Talbot, of rubber fame, Sir J. D. Rees and others, to see that money and men are sent as and when required to the Tropics to ensure our commercial supremacy being maintained by helping, *inter alia*, to safeguard the health and lives of the men and the crops without whose help there would be no commerce to safeguard.

* Showing that our American cousins have benefited by studying "The High Price of Sugar," and also the section on "Develop India" in "How to Pay for the War."

"Tropical Life" helping in Argentina.

WE have received a letter from Mr. J. E. Uber, an agricultural engineer and formerly director of various experimental stations of the Argentina Government's Department of Agriculture, in which he tells us: "TROPICAL LIFE has been to me a great constructive power when building up Argentine *estancias*, and so I have given special reference to your paper in the attached article."

The article referred to was built up of some notes contributed by Mr. Uber to a paper called *Association News*, which is the organ of the American Manufacturers' Export Association, to foster foreign trade. In this article, entitled "American Farmers, Manufacturers and Merchants must co-operate to aid World Trade," some surprising points are made prominent, among them being the following:—

More than 60 per cent. of American wealth is controlled more or less by farmers.

The percentage of the entire export figures is 45 per cent. for agricultural products, plus 34 per cent. for raw cotton, which makes 79 per cent. agricultural values *v.* 21 per cent. industrials.

Then comes *the* eye-opener, for we are told:—

"It is most surprising for the majority of the people to hear from Mr. J. R. Howard, President of the American Farm Bureau Federation, that the barns, elevators and store houses of the United States are bursting with grain, cotton, wool and other products of last year's tremendous effort on the part of the farmers of the country. Thousands of cattle* are being held at a loss and the market for hogs is discouraging. The 1920 crop will be harvested before all the 1919 crop can be marketed. In face of such remarks it is difficult indeed to explain the high cost of living." It is indeed. If such a statement were not made in America itself and also in the organ of the leading manufacturing firms over there, it would be difficult to believe.

Continuing, Mr. Uber, towards the close of his article, said:—

"Experts have pointed out that it is a question of habit and education what kind of nourishment the individuals, as well as the masses, are using. Every business man, who takes in his hand a copy of TROPICAL LIFE, a magazine published in London, will awake to the fact that vegetation in tropical countries can be exploited to a much higher degree by making use of the tremendous organic deposits and fruits of these tropical alluvial lands."

* No wonder that America wants to sell and to ship 100,000 head of cattle to Germany.

How to Destroy Bamboos.

WRITING from Papeete, the President of the Chamber of Agriculture in the (French) Island of Tahiti, asked whether we could give them any information as to which method is likely to prove the quickest and at the same time most efficient and least expensive for destroying bamboos. Some properties in these islands, it appears, are infested by the plants to such an extent that war to the death has been declared against them, but this war is proving a lengthy and expensive one, especially when it comes to getting rid of the roots.

On receipt of the letter, remembering our training with Messrs. Nobels, we wrote to that firm and explained the position, and they agree with us that in face of the satisfactory results obtained from using explosives for breaking up hard pan and when removing tree-stumps, explosives should also do good work when it comes to eradicating bamboos, which, like all members of the grass tribe, takes a lot of eradicating. There is, of course, the question of cost, and the price of explosives is higher than it was, but then so is the cost of labour. We would also claim that whilst any agriculturist can obtain all the explosives that he needs—at a price—it certainly cannot be said that the estates can afford to give up labour to do such tedious and hard work as uprooting bamboos. If they can be blown out, the roots and tops can be burnt (or turned to some use) and the soil will be in excellent condition for planting, or rather for ploughing previous to being put under a crop.

The alternative is to kill the grass or bamboos by poison, so we applied to Messrs. Robinson Bros., Ltd., of West Bromwich, and in their reply they say that if the land can be left unused for about nine months, a year would be safer, after the bamboos had been removed, the use of arsenical compounds which they supply should prove quite successful. We are putting both these firms into touch with the Tahiti Chamber of Agriculture, and are now anxious to have particulars of the results.

Since writing the above we have come across the following paragraph taken, we feel sure, from the *West Indian Committee Circular*, but no name nor date has been attached:—

"A very thorough and cheap method of completely destroying tree roots is the following: Bore several holes in the stumps as deeply as possible. Pour into the holes a saturated solution of saltpetre. After a few weeks' interval light a bonfire on the top of the stump during dry weather. The whole stump to the smallest rootlets will smoulder away. The saltpetre penetrates throughout the root system and acts like touch paper. The resulting ash fertilizes the soil."

THE 1916 report of the Dutch Colonial Institute Union of Amsterdam gives a series of interesting statements on the various economic questions that have arisen in connection with the Dutch colonies showing that painstaking efforts have been made to further the cultivation of the land and to develop industry in those colonies.

The 1917 report deals rather with the interests of the colonies from the educational and hygienic point of view. Between the two of them the ground under discussion is well covered.

A League of Business Men v. a League of Nations.

MUCH is hoped of the World Chamber of Commerce, or to put it in more popular language, in the ultimate results of the preliminary meetings of the International Convention of Chambers of Commerce. The idea, we are told, emanated from a small congress at Atlantic City, and from this, it is hoped, will be reversed the statement that "business breeds wars." Who knows whether, given such an International Chamber, business men will not do more than the League of Nations (to be) to bring peace to the world. The practical business men of all nations realize far more than the rulers seem able to do, that peace relations mean business relations, and therefore as soon as business relations are really restored then, but not until then, will peace truly come in our midst to stay.

Among the subjects for consideration at such a gathering as a World Chamber of Commerce would be the facilities for importing and exporting, which are certainly inadequate for the world's needs at present. If commerce can be used to realize peace in the world, it cannot be denied that in actual circumstances irritating commercial difficulties arise which lead to international differences, and therefore the desirability of an international organization which can help to settle these differences is obvious. Mondial commercial laws should be codified. The intensification of universal production and the wise repartition of that production is essential. Stress is laid upon the necessity of strengthening friendly links between peoples, so that all nations may benefit from the natural advantages of other nations. It is proposed to hold full meetings of men of affairs—business men and financiers—at least every two years.

Trade, Politics and Finance.

WE are going straight to market reports first, only expressing the hope that everyone who is interested in Empire development will read (if they have not already done so) Mr. J. H. Batty's speech to the shareholders of the African and Eastern Trade Corporation, Ltd. Here, in our opinion, we have the ideal development policy built upon the right lines, a policy which we were thinking of when writing "How to Pay for the War," but which we did not, at the time, dream would become a fact so early. Like the Tatas in India, Mr. Batty and his friends are doing excellent work with and for West Africa and elsewhere. May the best of luck crown their efforts; they certainly deserve success, whether in connection with the purchase and control of one of the largest half-dozen cocoa and chocolate manufacturing concerns in the United Kingdom or in absorbing Loder and Nucoline, Ltd., the vegetable oil firm, in nearly doing the same with the British Oil and Cake Mills, Ltd. (the public got wind of the matter and up went the shares, or that would have been absorbed as well). The Corporation has, however, secured a controlling interest in several Lancashire cotton mills and also in a silk concern, specializing in silk handkerchiefs at Macclesfield. All this is as it

should be with large concerns trading with important centres. Discussing prices, Mr. Batty said:—

Control prices of palm-oil, £48 per ton; palm-kernels, £26; ground-nuts, £32; cocoa, £65. After control was removed: Palm-oil, £95; palm-kernels, £46; ground-nuts, £50; and cocoa, £108. To-day's prices (July 9th): Palm-oil, £56; palm-kernels, and also ground-nuts, £32; with cocoa (good fermented), £72. "Your directors," added the chairman, "consider that the present basis of prices is a much safer one for our trade than the high level which has existed up to recently."

Coming to current market news, extreme prices for sugar continue, whilst with other crops:—

Coffee continues to drag, and will be uncertain until American speculators have unloaded and left the usual run of buyers and sellers to fight things out on a normal basis. Present prices are considerably below what was paid for many of the parcels now offered. Nairobi has been selling from 112s. 6d. to 124s. 6d. for good colory and 135s. for peaberry, Costa Rica at 135s. for fair bold and up to 143s. for peaberry. Cotton, like the many reports concerning its output, has been irregular and uncertain, closing on July 10th around 23.71d. down to 20.97d. for December and 20.03d. next March. American reports 35,504,000 acres under cultivation (against 33,960,000 last year), from which they hope to get nearly 11½ million bales, against just under 11,000,000 last crop. With shellac, T.N. Orange is quoted 670s. to 690s., and even 695s. for August. Copra has had an excitable month. Shipments made at high rates have been coming to berth at last, congestion here, there, and everywhere delaying them. The consequence is that now when the price here was around £45, stuff bought on the basis of about £70 has been arriving, and the buyers on the Continent "kicked." They had no right, legal or moral, to have done so, but they "bucked" hard all the same, and like all "buckers" gave trouble at home. Since then the market, stimulated maybe by this trouble being removed, has improved, and though lower than they were, prices still run around £47 up to £48. At one time it looked as if £50 would be reached, but £48 or £49 was the top notch reported; this for Ceylon, Malabar still seems unobtainable over here. I believe that there is, however, some tendency for recent arrivals to accumulate on this side. This may be a sign of strength through holders expecting a rise; it may be a sign of weakening through holders being unable to realize. Coconut oil is at £77 spot and £75 for shipment, against *nil* for Cochin spot and £82 for shipment; £67 for soya bean oil and £75 for ground-nut oil. Tin is very firm and tends upwards; extremes run from £252 to £262, with a cabled sale from the East at £269. Copper stands at £90 to £92.

The following is a comparison of the principal points in the returns of the Bank of England on July 17th as compared with last year:—

July 17th,	1920	1919
Bank Bullion ...	£122,879,497	£88,703,675
Reserve of Notes ...	15,682,145	26,104,115
Private Securities ...	78,622,562	82,405,961
Notes in Circulation ...	124,237,640	78,896,650
Rate of Discount ...	7 per cent.	5 per cent.
Price of 2½% Consols ...	47	51⅞
Price of Bar Silver ...	52½d.	54¼d.

Cocoa, Sugar and Coal.

As it has all along been claimed, and with truth, that until France gets coal she cannot, any more than Germany, go ahead with her sugar making (when the beets have been grown), and that without sugar she cannot make chocolate for eating and drinking on a large scale, it will be as well to take note of what the evasive German has done, and how he is trying to avoid carrying out his promises to send coal to France instead of to his friends in Holland, Switzerland, also large chocolate and cocoa-making countries.

Leaving politics out of the case, let us jot down the facts as gathered from reports of the recent meeting at Spa. It is to be gathered that, as with money, Germany has plenty of coal, but does not want to own to it until she has bamboozled the Allies (or given up trying to do so) in every way possible. The Germans at Spa evidently lied, as always. They wished to claim that they were behind their promises in respect to coal deliveries through circumstances over which they had no control. France differed, and showed that Germany is laying up supplies for her own use that will last for months, and that, no matter how low the stipulated figure is reduced, the Germans consistently deliver only half the proper quantities. After all perhaps the German is right. The coal is not being delivered apparently for reasons beyond his control, for he cannot control his nature not to go straight and never to keep his promise.

Meanwhile those interested in sugar production in Germany, and in sales of raw cocoa to Germany, Holland, and Switzerland will have read that not only does Germany seem to have all the coal she needs, but far more, since she is to send, voluntarily, 35,000 tons a month to Switzerland and 80,000 a tons a month to Holland. All the same we hope the Allies, and especially General Foch, will see to it that France gets her share, and not only 50 per cent. or less, for be it remembered the quantity has already been reduced by half, although to the lay mind it is incomprehensible that this should be so. No wonder the man in the street has come to believe that the surest way to win a war is to lose it. This must be why so many Germans believe that it is they who have won the war and not the Allies. The little joke over coal delivery evasions must have clinched this belief.

Meanwhile, going back to economics, we can take it that, except perhaps France, the chief Continental buyers of raw cocoa will have the coal needed to use in their factories, and this being so, then Germany, Holland, and Switzerland should be substantial supporters of the raw cocoa market as soon as there is no longer any need for Germany to continue to make believe that she has no coal to send to France, or, having the coal, that she cannot send it along.

Once Germany has been brought to heel and forced to keep her promise, the larger coal supplies in France ought to help remove the present slump in raw cocoa. Is this why manufacturers are more willing to buy for delivery in the late autumn when Germany and the Continent should be having coal on "the move"?

The London Cocoa Market.

BY THE EDITOR.

BEFORE I start with the ordinary market gossip, as the probable chairman of the Section to deal with British-grown cocoa, I want to remind all cocoa men to the first, second and third degree (including those who wish to take an interest in cocoa as planters or traders, but who do not know how to begin), that if they wish (as I hope they will) to take part in the Cocoa and Tropical Produce Congress to be held in London next June (in connection with the Rubber and Tropical Exhibition) they must send in the names of their papers soon and start to hunt up their notes. In these days time passes with amazing quickness, and so it is high time to receive at least the names of the papers, better still to have some inkling of the views to be discussed, in order that those who are also interested, *pro* or *con*, in such views will know what is coming and so arrange to attend.

Much will happen between now and next June with all tropical crops, but especially with cocoa, which is in for a lean time until supplies of sugar can catch up with the world demand. (This means, roughly, that we want 30 cwt. of sugar to each ton we are now receiving.) In face of this, it is to be hoped that those who produce and deal in raw cocoa abroad, as well as the buyers and manufacturers over here, will leave on record their views of the cocoa industry whilst the Great War was being fought to a finish and during the two years that followed the armistice, so that when the next one comes we shall be better prepared for it both with sugar as well as with cocoa, raw and manufactured.

The question of artificial *v.* natural means of drying wants to be thoroughly discussed, and a decision arrived at which can be placed on record for others to build upon. We hope that Mr. Organ, of Messrs. Cadbury, who has recently come back from a three months' trip on the West Coast of Africa, or another representative of that firm, will tell us what they are doing and have done over there to "pull up" the quality of the Gold Coast beans, so that representatives from Bahia could see what they can learn from the Gold Coast methods, or from one of those ever-improving planters from Grenada, what can be done in Ilheos or elsewhere in Bahia to eliminate unsound beans in the parcels sent over. There are those who declare that if Bahia could only dry her cocoa independent of the weather, especially in some districts, there would be no "fair," but this is not correct. There would, however, be a much stronger and more even demand for medium Bahias, as compared with the best quality, if buyers were quite sure of what they would get. At present no one can claim that this is the case, or that there is any likelihood of its being so, unless the Combine from here, or Messrs. Walter Baker and Co., or H. O. Wilbur and Sons from America, go up to Ilheos and help Mr. Hull of the Ilheos-Itabuna Railway and others to "pull up" fair Bahias and eliminate the unsound, in the same way as Messrs. Cadbury and others have improved West African cocoa and eliminated the mouldiness, at least on the outside of the beans, which was far too prevalent in the past.

It is to be hoped that special invitations will be issued to Mr. J. B. Rorer in Ecuador to come over and tell us about conditions on the estates over there, to Mr. Van Hall or Dr. Sack to do the same in Java, and an expert from Surinam also. There is so much to learn from all these centres, as well as from Bahia, *re* pest-protection methods as well as in connection with the preparation of the beans themselves. Then there is San Domingo, an important centre, producing a cocoa, "no great chop" to some folk, but which "goes down" well in America as a mild neutral base, which cannot be said of Accras, although I believe Lagos, i.e., Nigerian cocoa, approaches the San Domingo bean pretty closely on this point. We know very little about San Domingo, so that it would be a great help if we could persuade a leading cocoa man from there to come and talk to us. Mr. Felix Camps, who is stationed at San Francisco de Macoris, would be an excellent one to ask. He hails from Trinidad, and knows English and the English market as well as America's tastes and requirements. Mr. Holgar Johansen is the Director of Agriculture over there but is a busy man, so it would be best therefore to ask Mr. Camps to come across.

Even if these experts, or others who can teach us so much, just at a time too when it will be particularly important for us to learn all we can, cannot come over in person, it is to be hoped that for the common good they will put their views down in writing and so send over papers which can be read and later on published, in order to show what they are doing and what they hope to see done in 1921-22. By that time Europe will have settled down, Germany will have given up pretending that it has no money, and the continental demand generally will have increased. Let us therefore polish up our knowledge, which has got decidedly rusty since 1914, when the last Congress was held, as since then, owing to the war, we have had no chance of learning first-hand from those who are doing the work of the cocoa world how it has gone with them.

This long silence, when so much has been done, will make the coming Congress of far more importance than were those held in the past, although we all know how useful they have proved. As Chairman of the British section to do with cocoa (Mr. Emile Alleaume is Chairman to do with the non-British centres), under Dr. Torrey as head chairman over the entire Congress, rubber, cocoa, vegetable oils, fibres, &c., I invite everyone to do with or in any way interested in raw or manufactured cocoa to attend the Congress, and to prepare papers to read themselves or to be read by others in their absence. In our issue of last August (p. 122) a list of subjects was given from the columns of the *Confectionery Journal*, which was then considered suitable for discussion. Later on, probably next month, I will repeat these, and others that my readers would like to see added. And now to discuss market news.

I am not sure that there is any news to discuss; elsewhere in this issue the sugar situation is considered in detail, and so it will be again next month, when the leading article will deal with India's prospects and the Tata sugar proposition, mentioned in the leader for this month on p. 105. This is as it should be, for without sugar we shall not sell our cocoa. It is wise, therefore, to look round for increased sugar supplies,

both for the immediate as well as the more distant future.

America is doing much to aggravate the position of the market, and until this becomes a thing of the past, sales of raw cocoa, especially ex-first hands, will continue to be difficult both in the U.K. and on the Continent. It May, it will be remembered, the American market moved in a most erratic manner. Already complications had made themselves felt in connection with troubles over sugar, transport and labour, and this alone was enough to break down prices and was a large contributory cause of the decline in values that has since taken place. The rest of the help, which caused the present slump, came from America's over-buying to feed Europe with until she found that however much Europe was willing to be fed, she was not willing to pay for the meals on the present basis of prices, and so the United States is now a seller rather than a buyer, just when sellers are by no means welcome guests in the world's market.

Even when things were at their worst, manufacturers whose opinions were worth noting expected some revival to show itself in the late autumn. This can still come—when it does, no one will want to drive it away. What the makers were then asking and as they continue to ask is: What about sugar; what will the allotment per capita work out at, and what will the cost per lb. amount to month by month? America claims that she can command all the sugar she wants and so will hold the trade of the world for cocoa and confectionery in the palm of her hand. Well, if it pleases Uncle Sam to claim this, he can do so, the rest of the world is far too busy to trouble to contradict him.

At that time—mid-May—Sanchez and Accras were coming down. Of the two, Accras fell the most just then; elsewhere Trinidads were also breaking away, but Ecuador and Caracas kept up. Bahias were not stable. In mid-June Guayaquils were still relatively high, but Bahias and Accras, &c., were not doing well, and so it was elsewhere. With America so weak, this was but natural, although they claim at times that the cause of the great fall in values came from here. I would claim that the over-supply of bulk cocoa powder that America put on the market and did not sell was the main cause of the trouble. All this, however, is past history; whatever the cause the result remains, prices are much lower, and the future is uncertain. Let us therefore face these two facts and see what can be done to steady the markets generally.

The rush to feed Germany and Austria for payment at remunerative prices which did not materialize, caused several important manufacturers in America to neglect their home trade. These firms probably have been very hard hit, firstly, because they have more than their share of not-wanted goods on their hands; and, secondly, because whilst running after the shadow of a big export trade they dropped their bone in the shape of their home market. To-day, therefore, their factories are idle and the producers and others in the habit of selling to them also feel the effect, if only because there is less competition as well as fewer orders.

Leaving America for Bordeaux, we find a dull market but still a willingness to buy Accras. Much of the visible supplies at Bordeaux, also, it would seem, at most centres, are in dealers' hands. This is why the cocoa men are keenly watching the tendency of the banks to restrict credit, and to do so somewhat premptorily and in a way that is in favour of the big firms and against the small ones. Now anything that tends to drive the smaller firms off the market, be they makers or dealers, and increase the power of the bigger firms who are rich enough to be independent of bank credits or influential enough to get all they want, is a challenge to producers abroad and a menace to their interest. The big firms over here have a nasty habit of combining and therefore of reducing the world competition to the detriment of planters and exporters abroad who, having no votes on this side where such a policy emanates, cannot help themselves and so get squeezed.

Speaking on this point, a paragraph out of the *Confectionery Journal* of London is worthy of attention, for it says: "Much satisfaction has been expressed over the recent Budget in official circles but nowhere else, and there is no doubt that it has, on account of the Excess Profits Tax, caused enterprise to become mummified, whilst the action of the banks or the Treasury in putting the screw on the smaller firms—i.e., those who have not enough capital to carry on during these days of uncertainty and of little or no business orders—is hitting the cocoa market particularly hard. It was the multitude of orders that gave it strength in the past, especially before America went slack, and orders from the United States were never weaker and fewer than to-day. Why, therefore, withdraw financial support from the market, as is being done just when it is particularly needed? Those who have read "The Garden of Allah," or seen the play, must, when they are being pinched, think of Boris Androvsky and the new head of his monastery who did not know the man with whom he had to deal, and so was the cause of Boris's breakdown by insisting on a policy which the Russian felt was unsuitable and dangerous. Official financiers may be very proud of the results of their policy and it probably saves His Majesty's Treasury much trouble to collect huge profits from a few firms than small and reasonable profits from many, but the harm being done by reducing the number of traders and of restricting enterprise just when we should be doing all we can, at any rate in connection with cocoa, to go ahead seems to be far from praiseworthy. *It certainly will hit producers abroad very hard.*"

Perhaps the producers can, after all, make themselves heard on this and other subjects which need adjusting if progress is to be made. Maybe, however, they are all quite satisfied, and so there will be no complaints.

Meanwhile stocks over here continue to grow. As Liverpool does not show what her accumulations amount to exact figures in bags cannot be given. The Board of Trade return below speaks of our having had 67,200 bags on hand at the end of the half-year, say, at 15½ bags to the ton, about 1,040,000 bags. These must be mainly Accras. Such a stock tends to be below rather than above the cocoa in visible supply, for I should have said that London and Liverpool alone had at least a million bags between them.

Here are the Board of Trade returns for the six months, and then I will give details of the London

and Havre stocks. My readers can compare present figures with the last completed year before the war.

Raw cocoa only	Landed Tons	Del'd H.C. Tons	Exported Tons	Stock, June 30th Tons
1913	20,072	14,279	3,832	10,700
1918	10,039	33,419	583	20,200
1919	76,758	31,200	2,071	64,150
1920	74,050	29,151	18,575	67,600
	Decr. 2,708	Decr. 2,049	Incr. 16,504	Incr. 3,450

In June alone we received 13,157 tons against 15,925 last year, and delivered 6,697 tons (4,549 for Home consumption and 2,148 exported) against 5,228 tons last year. It is pleasant to see this slight increase for the month and also to note that on the six months' deliveries, thanks to the export, we are 14,500 tons ahead.

Havre has grown fat during the last two months. On April 30th she had only 147,343 bags, which grew to 222,572 bags at the end of May, and now stands at 301,948 bags as under, with another 74,500 bags waiting outside to come in and be added to her stock.

Havre's Stock, June 30th.

	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará	2,757	290 to 310	1,010	156 to 160
Bahia	44,152	215 ,, 260	44,082	160 ,, 175
Venezuela ...	20,036	325 ,, 425	8,887	175 ,, 220
Trinidads ...	41,375	280 ,, 300	14,972	172 ,, 177
Grenada & O.W.I.	10	240 ,, 290	4,033	167 ,, 176
San Thomé ...	65,446	200 ,, 260	4	155 ,, 163
San Domingo ...	19,694	215 ,, 250	4,256	145 ,, 155
Haiti	23,105	180 ,, 230	11,869	132 ,, 160
Accras, &c. ...	54,917	185 ,, 205	101,568	132 ,, 138
Guayaquils ...	12,926	310 ,, 340	91,264	168 ,, 176
Other kinds ...	17,530	—	1,460	—
Totals	...301,948 bags		283,405 bags	

London Stock, July 10th.	1920 Bags	1919 Bags	1918 Bags	1917 Bags
Trinidads	44,629	25,360	9,580	27,566
Grenadas	23,559	14,554	15,862	27,048
Other W.I.	14,411	2,500	4,585	27,736
British African ...	63,119	36,901	37,821	54,604
Portuguese African ...	4,774	4,854	3,323	16,913
Cameroons	1,378	3,121	3,344	15,604
Ceylon and Java ...	21,394	7,736	17,944	39,110
Guayaquils	82,429	16,186	22,627	51,803
Bahia and Brazil ...	132	986	4,109	7,488
Other foreign ...	34,038	3,990	7,452	9,169
Totals ...	289,863	116,188	126,647	277,041

And now as to values. No reliance can be placed on any published figures except such a statement as one to the effect that Accras have been dealt in in small quantities, 5,000 or 10,000 bags in a week, at prices ranging from 55s. to 75s. This gives a safe margin, especially if Germany can get sugar in the same degree that she has always got everything she wants. Trinidads are spoken of as low as 110s. Fine Grenadas have been sold at 110s., but since then, in the absence of actual sales, the best marks are valued at 100s. only. Some Pará up at Liverpool realized 97s., and that is all I will say. At the moment it is not a matter of price, it is entirely a matter of impediments. Remove these and enable sales to be made, and then we shall not trouble about prices, they will adjust themselves. Meanwhile base all your values on fermented Accras at 69s. or 70s., with a tendency to go lower rather than otherwise.

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The coming Rubber and Tropical Products Exhibition, London, June, 1921.

THE COMING CONGRESS. RAW CACAO SECTION AND PRIZES FOR THE BEST SAMPLES OF CACAO IN THE EXHIBITION.

EXCELLENT progress is being made with the above Exhibition, and now the cacao-producing centres have to arrange about the trophies for exhibitors and the papers to be read at the Congress.

Mr. J. H. Batty, who looms so prominently in West African circles, although extremely retiring personally, has very kindly promised to give a Cup in connection with the competitions at the Tropical Exhibition next year. Details have to be arranged and Mr. Batty's wishes consulted, but it would be a great thing if this Cup could be offered for competition between cacao producers in British West Africa, leaving leading men or associations in the other large centres to send their own trophies and conditions on which the prizes are to be awarded, so that they will do the most good to all. If another firm would offer a cup for palm-oil or palm-kernel oil, it would also be a stimulant towards improved production.

With this idea we have written to our good friends, the *International Confectioner* of New York City and to Messrs. Walter Baker and Co., Ltd., of Dorchester, Mass., to see what America can do in the way of a trophy for choice Criollo cacao, about which the *I.C.* has published more than one article written, not in America, but over here. Then we have approached the *Centro Colonial* and Messrs. Francisco Mantero, Ltd., of Lisbon *re* San Thomé, Mr. G. Macgregor Frame *re* the British West Indies, the A.A.E. of the Guayaquil *re* Ecuadorean cocoa, the *Times* of Ceylon *re* their cacao and coconut oil, Mr. Felix Camps *re* San Domingo, and last but not least, several friends *re* the Bahia output, which is already assuming such proportions that, if Europe does not settle down soon, one wonders where all their cacao will go to. Returns show that during the seven months January-July this year London only received 479 bags of Bahias, and none at all either in 1919 or 1918. For this reason alone Bahia should offer an important trophy so as to attract the attention of buyers to her cacao in London that it deserves, and which it receives in America—at present. But even in the United States Accras are going ahead, as is shown in this month's cacao market report. All centres, therefore, who want their spot in the sun of the World's Demand must boom (or it is boost) their cacao next June at the

Agricltural Hall, or else they may have to take a very back seat when the rush for orders starts after peace —real peace, and not a Russo-German imitation—is in our midst again.

Will those centres, therefore, who wish to participate in the competitions (and also in the giving of cups and trophies) kindly send along suggestions of how the competition can be turned to the utmost permanent advantage from their point of view. Shall the cups (they are offering) be for a district which shows the most progress since 1914, or for an individual estate? Can a number of small estates band together with advantage and asked to be entered up jointly if the prize is for progress only? If, on the other hand, quantity and quality are sought after, on what conditions can the competition run, especially between large and small owners, and how shall the points be awarded?

The main object sought after is to benefit the producers. It is up to the producers, therefore, to show the Executive of the Exhibition how this object can best be achieved. Will they, one and all, try to do so?

The Condor of British Literature.

BERNARD SHAW IN ONE OF HIS ANDEAN FLIGHTS SURVEYS BEATRICE Y SIDNEY DE LAS VEGAS.

SOME years ago Mr. and Mrs. Sidney Webb journeyed forth into the tropics and visited many centres of interest and importance. How they were received, what the overseas officials thought of these iconoclasts of old-time ideas and red-tape regulations, and also and especially what the iconoclasts thought of the officials we have yet to learn. It has been one of the few disappointments of our life that a book—*the* book that we wanted to see published—on that journey has not come our way. We still hope to see it.

On the rare occasions when we allowed ourselves to go absolutely slack in the tropics, we used to spread a skin over the ground and lie flat on our backs watching the graceful curves of the black vultures soaring ever so many feet up above us. For symmetry of curves and grace of movement, nothing can exceed the attractiveness of these birds in the air, and as it is with them, so it must be, but to a far greater extent, with their giant relative, the condor of the Peruvian Andes. So, too, is it at times with the Condor of British Literature—Mr. Bernard Shaw—when he lets himself go. Like or dislike, the bird or the man, their flights are bound to excite admiration, and you cannot but wish at times that you could emulate their prowess.

These times came back to us as we once more laid on our backs in the sun, reading Mr. Bernard Shaw's "review" in the London *Observer* of "A Constitution for the Socialistic Commonwealth of Great Britain," by Beatrice and Sidney Webb (12s. 6d. net), in which he does not say a word concerning the contents of the book, but devotes nearly a column and a half in giving us his views on the authors who, as most of us know, are close friends of his.

This trio of friends has always interested us immensely. In our great ignorance of Literature (with a capital L) and the literary giants of the present day, we have always wondered what Bernard Shaw has done to be sitting up there on the Andean height of fame that he undoubtedly occupies, whilst Mr. and Mrs. Webb are lost to view down in the plains where, we would claim, whether you like the planning of their city or not, and whether you do or do not admire the type of architecture that they believe in, you must own that it seems as if they have tried to do far more in their City in the Plains to ameliorate the lot of mankind than their elusive, showy, strong-flying friend and advertiser, who is here one moment, and miles away in his flights of fancy the next. Perhaps that is why the three, otherwise so widely separated, are of such great help to each other. Mr. and Mrs. Webb design the perfect city and the perfect rule and regulation of its population, and G. B. S. flies aloft and calls attention to it, and do what you like you must attend to him, but—on the whole we fear the world is not willing to attend to Mr. and Mrs. Webb. Why is that? Do they dislike or distrust their views, or are they so fascinated with the powers of their volatile friend that, by keeping their heads in the air to watch him, they never can see what is going on down in the plains?

Perhaps Mr. Shaw himself explains the reason of all this when he tells us: "The first condition of stable government, say the Webbs with unquestionable truth, is that it shall be Government by consent of the governed. Never! exclaims the ungovernable Briton. Death first. Starvation first. To hell with the Webbs and their schemes for regulating us! We will not be regulated. We will do what we like and die in the workhouse. This regulation business is stifling, disgusting, un-English."

Perhaps the utility of their friend to Mr. and Mrs. Webb lies in his being at hand for them to practise on and to convert to reason and rule. "If we can only lick George into shape, instead of being sent to —— by him in print," one seems to hear them say, "then indeed we can die happy, for we shall have achieved the unachievable." If Mr. and Mrs. Webb are to remain on this earth until their friend has been tamed and made to live in a cage like a well-behaved civilized being, they will be on this earth longer than Methuselah. Mr. Bernard Shaw, in his turn, backs the Webbs against the whole world for ability, intellect and independence, as when he tells us: "Among the many benevolent fairies who must have crowded to their christenings, there was one malignant elf who pretty nearly undid all the good done by the others by the master-stroke of damning the pair to be English. Of all tragedies of square pegs in round holes, can there be one more heartrending than that of a supreme genius for law and order condemned to live in an inveterately anarchist country, and to devise perfect schemes of government for a nation which has defied aristocracy, oligarchy, democracy, and all systems of government with equal succes, because nothing will induce it to consent to be governed at all?"

The world adores a wit, especially one whose jokes are piquant and carry just a spice of mischief. We are told that there is nothing new under the sun. That meat is meat, and always has been, and so with

fish and fowl; the only difference is how they are cooked and the sauces used. The Shavian Sauce is undoubtedly popular, no matter what the quality of the meat may be; when prepared à la G. B. S. everyone rushes to partake of it. The plain boiled joint à la Sidney Webb, or *Poulet roti à la* Beatrice Webb, cannot compete against the spiced-up dish, but all the same in these days, when no one can tell what will happen in a year's or in two years' time, we would suggest that, even if plain talk and dull facts do stick in our throats or not, that whilst we watch the Condor take his mighty flights, or whilst we still make use of the world-renowned Shavian sauce, we sometimes turn our eyes to the plain—plain, dull facts emanating from the house on the bank of the Thames facing the jungle of Lambeth and do not entirely ignore "A Constitution for the Socialistic Commonwealth of Great Britain" or "Industrial Democracy" by the same authors. Much as we may or may not dislike and disbelieve in the doctrines of Beatrice and Sidney Webb, we cannot escape the march of the times, and so it is best to realize through such books exactly what we are up against. If anyone can show us that it is Mr. and Mrs. Webb.*

"The High Price of Sugar" and Production in the West Indies.

One of our subscribers in Trinidad, B.W.I., wrote us the other day as follows:—

I received my copy of Tropical Life for May, and read your article on page 70 on "Fertilizers the Main Hope of Relieving the Sugar Shortage." I wish to congratulate you on the sentiments therein expressed. You, I see, as well as others, have noted the fact that, at least as far as the British West Indies are concerned, present high prices have apparently failed to result in increased production to any material extent. The same old stereotyped excuse of lack of labour is trotted out like the proverbial red herring by the average planter. I do not mean by this to say that a shortage does not exist, but not in the sense that is usually intended. As long as the present antiquated system of field cultivation is persisted in there will probably always be a shortage. The remedy for present conditions is not only more labourers, but more skilled men and a greater application of machine methods to field work. This means in many cases a complete reorganization of existing field systems, and until this is brought about there will be no real progress. Fortunately signs are not wanting of the coming transformation, otherwise the outlook would be black indeed.

Reference to the cane-farming figures of Trinidad affords food for thought. In the year 1919 the farmers sold 270,324 tons of cane to the factories, or an average of less than 13 tons per head. Is it any wonder that there is a shortage of labour with such an efficiency (?) record of production of available manpower among the small producers? If these do so badly, what can you expect of raw labour, which is still more inefficient?

The Sainte Madeleine Sugar Co. of Trinidad, to cite only one instance, when I first made their acquaintance in pre-war days, were using no agricultural machinery to speak of. There was a monumental heap of old scrap iron in existence that was an interesting comment on the methods then in use. To-day, things are changed and agricultural machinery is being largely employed, though there is still considerable room for improvement. The stoppage of the Indian indenture labour may be the best thing that ever happened to Trinidad, if only the planters will rise to the occasion and modernize their methods.

Not many months ago Mr. Nowell, Mycologist of the Imperial Department of Agriculture, told the cane growers of Trinidad that the proper way to grapple with the frog-hopper problem was to introduce improved cultivation and fertilizers. They were told the same thing back in 1912 and 1913 by myself, and others whom I could name, but the advice then given fell on deaf ears. The system of chasing the insects with a spray pump—like a new toy—seemed to be then the fashion, and in those days little heed was given to the fundamental agricultural principles that most always come first, no matter what other treatment may be found necessary in addition.

The need of fertilizers is only too evident, but one must not lose sight of the fact that fertilizers must be intelligently used in connection with other field factors such as cultivation. Even Mr. R. S. Cunliffe, who represents the Chilean Nitrate Committee out here, will tell you that only by combining cultivation with manuring will the best be got out of either the land or the canes. To manure without cultivation is courting at least partial failure. The lack of proper tillage in many cane fields to-day is one of the greatest obstacles to the economical use of fertilizers. Many planters, it is true, are using fertilizers, but only in small quantities, largely because their methods of field cultivation will not permit of the profitable use of frequent applications.

Your statement regarding the bringing of nitrate of soda (by the way, also potash bearing nitrate salts) up from the Chilean Fields through the Panama Canal is timely. It may interest you to know that the office of the Chilean Nitrate Committee in this island has been consistently working towards that end for nearly a year. It is probable that before the growing season of 1921 opens, the West Indian planters who care to avail themselves of the opportunity will be drawing their fertilizer supplies direct from Chili at a substantial saving in their manure bill.

Excuse this scrappy comment, but pressure of other matters is largely the reason. Keep up the good work. The situation needs all the push that can be applied to it and the object sought for, viz., a permanently larger output of sugar is worth all the time and trouble it will take to achieve it, for so much depends on ample supplies.

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* More than one of our readers have had to suffer—in spite of the letter published in the *Times* calling attention to the matter—through a mistake we unfortunately made when we called our book "How to Pay for the War," forgetting at the time that Mr. Sydney Webb had used a similar title about twelve or eighteen months previously. It is only in the sub-title that we differ. The single bright spot in the matter has been that those who got Mr. Sydney Webb's book by mistake have been very pleased with it.

Vegetable Oil Notes.

The price of copra has been steadily rising of late, although, as the following table shows, rates for the oil remained the same except just at the close, when, strange to say, copra had gone back.

COPRA PER TON.

	London F.M.S.	London Ceylon	Marseilles F.M.	Marseilles Ceylon
	£ s.	£ s.	£ s.	£ s.
August 17 ...	54 0 to 55 10	56 0 to 56 5	52 10	53 0
,, 16 ...	54 5 ,, 55 0	54 0 ,, —	53 0	54 0
,, 12 ...	55 0 ,, 55 15	55 0 ,, 55 5	53 10	55 5
,, 11 ...	55 5 ,, 55 10	55 10 ,, 55 15	54 0	55 15
,, 10 ...	55 0 ,, 56 0	55 10 ,, 55 15	54 0	55 15
,, 7 ...	55 15 —	55 15 —	53 15	56 0
,, 3 ...	50 10 —	51 0 —	49 10	51 0

No quotation for Cochin or Malabar.

COCONUT OIL PER TON.

	Ceylon Spot	Ceylon Afloat	Cochin Spot	Cochin Afloat
	£	£ s.		£
August 17 ...	89	—	105	—
,, 16 ...	88	88 0	105	—
,, 12 ...	88	85 10	—	87
,, 11 ...	85	83 0	—	85
,, 10 ...	85	83 0	—	85
,, 7 ...	85	83 0	—	85
,, 3 ...	78	77 0	—	82

OTHER OILS PER TON.

	Castor Firsts	Ground-nut Crude	Palm kernel Crude Hull spot	Cotton seed Crude Egypt
	£	£ s.	£	£
August 17 ...	73	82 0	78	69
,, 16 ...	73	80 0	78	68
,, 12 ...	74	80 0	77	68
,, 11 ...	74	80 0	75	65
,, 10 ...	74	80 0	75	65
,, 7 ...	74	77 10	75	65
,, 3 ...	75	75 0	70	62

WE are pleased to hear from the Overseas' delegate of the coming International Rubber and Tropical Products Exhibition and Congress, in which we hope and believe vegetable oil-seeds and oils will be a prominent feature, that the chairman and vice-chairmen have been appointed, and among these the following have agreed to act: as chairman of the Congress, Dr. Torrey (as on previous occasions); as sub- or vice-chairmen, especially in connection with the vegetable-oil sections, Mons. Emile Baillaud, general secretary of the Institut Colonial de Marseille, and Mr. E. Richards Bolton (author with Mr. Cecil Revis of "Fatty Foods"), who, since the death of Dr. Lewkowitsch, has come to the front as our leading authority on oils and fats. These knotty appointments settled, the Overseas delegate (Miss Edith A. Browne, 43, Essex Street, Strand, W.C.) will be glad to receive as soon as possible the title of papers to be read at the Congress before the section dealing with vegetable oils. The authors of such papers will, it is hoped, make every effort to be present, but if this is impossible, every care will be taken for a competent deputy to take charge of the paper to be read.

WE are indebted to the *Financial News* of August 11th for the following notice in reference to the second edition of our popular book, which now includes a section on dwarf coconuts, based on the Sungei Nipah Estates, *plus* our own views as to what to look for with regard to yields:—

A PRACTICAL GUIDE TO COCONUT PLANTING. By (the late) R. W. Munro and L. C. Brown, late Government Inspector of Coconut Plantations, F.M.S. Bale, Sons and Danielsson, Ltd., Oxford House, W.1. 15s. net.

This informative publication, dedicated to Sir William Taylor, K.C.M.G., late Resident-General of of the F.M.S., though not intended to be an "enquire within" about everything connected with the coconut, will be of immense use to the prospective coconut grower of the F.M.S., Sumatra and Borneo. Instructions are given in every branch of the industry, from the purchase and selection of land to the sale of the crop. Photographs, taken on various plantations in the Malay Peninsula, help to elucidate knotty points and add to the interest of the book. The volume is the result of years of study and experience, and should prove an authoritative guide to an industry which commands ever-increasing attention.

CONSIDERABLE interest has already been generated with the advent of this second edition on account of the Appendix, which deals very fully with the dwarf coconut tribe, their many sources of origin, qualities and disadvantages, &c. Mr. Handover's now well-known article is reproduced with the three illustrations, accompanied with a warning footnote concerning his estimate of a million nuts in 1919. Supposing, the footnote asks, that only half a million nuts were obtained against 574,000 in 1918, then all that is claimed for these nuts falls to the ground. Knowledge of this paragraph has made many coconut men in Malaya and elsewhere run for the book.

THE following, taken from p. 347 of the Report of the Punjab Chamber of Commerce for 1918, which we recently received, is not without interest. The paragraph is part of a letter addressed by Messrs. Christo and Co. of Lahore, who are largely interested in Indian sugar, to the Secretary of the Punjab Chamber of Commerce at Delhi:—

"It is well known to both our Chamber and the Government, that Messrs. Begg, Sutherland and Company of Cawnpore are interested in, and have made a speciality of the Indian sugar industry, and have striven for more than the last twenty years, at heavy pecuniary loss to the shareholders of the various companies they represent, to compete against foreign-made sugar, especially that of the Dutch East Indies, which, as is known, has ousted Mauritius so far as the Indian market is concerned. We therefore most emphatically protest against any special facilities being granted to a not friendly neutral country which would inevitably result in giving preference to manufactures of that country over manufactures of our Empire, and thereby incurring the risk of stifling the resources of the Empire, of which India is one of the most considerable component parts. On this ground alone, if not any other, we most strongly protest against booking being reopened for Java sugar from Calcutta to the Punjab or elsewhere in India."

Rubber Notes.

The Rubber Demand.

With rubber, as with other trades in the United States, reports speak of the serious congestion on the American railways, whereby not only the raw material to be sent to the factories, but also the manufactured goods to be distributed throughout America, are being held up. Worst of all, no one can say when relief can be looked for. Cuba is said to have borrowed some 5,000 trucks to move her enormous output of sugar from the estate factories to the sea front, and now the United States are either asking to have these returned, or else has already got them back, only to find them but a drop in the ocean of her requirements. The cocoa traders already have complained of how they have felt the pinch of restricted transport facilities, and so rubber could hardly expect to get off scot-free. Far from doing that, it would seem as if, as with cocoa, the railway congestion is seriously handicapping the American rubber industry, which has enough troubles otherwise without the question of transport butting in to add to them.

The London "Observer" on the Situation.

The congestion on the American railroads, so our London contemporary claimed on the first day of this month, is having some curious results. The fall in the price of rubber is attributed by some to the fact that American buyers are unable not only to obtain delivery of their purchases, but also to make delivery of what they have sold (or wish to sell). Therefore, as with elsewhere for this or for other reasons indirectly affected by the slump in cocoa as with rubber, the American merchant tends to become a seller, especially of raw rubber, which he brought forward months ago, and if he felt that he could only move the rubber when sold, he would probably be "all seller." Fortunately, however, the day that the raw material can travel without a hitch it will also be possible for the manufactured goods to be shifted likewise, and then things will be different—for rubber, for cocoa, and a good many other tropical crops. Whether America needs a million or only a hundred thousand trucks does not much matter, for until the workers show signs of buckling to and of turning out at least a portion of the rolling stock needed, the rubber position will remain difficult and depressed in America, and help to keep prices down on this side as well.

Congestion and Values.

This state of affairs has, very naturally, affected our prices and demand, especially as we have our own troubles to contend with. Congestion and shortage of locomotive, as well as of trucks, are not unknown over here, whilst the recent outrageous rise in transport rates (and also in passenger fares) must increase costs and thus further reduce demand. Labour in these days is not out to pay more without receiving more, probably twopence to each penny increase in his fares. All this is making the lot of the manufacturer more and more perplexing, although as a rule he can, with tyres and rubber goods, generally get back his increased costs with added profits on his merchandise, tyres, &c. It is, as it has always been, the producer and the consumer who pays, whilst the profits go to the manufacturer, to labour and, last but not least, to the Exchequer in the shape of Income Tax and Excess Profit Tax. Still, the average man is not so well off as he was in 1914 or when discharged from the Army, and motor firms and sellers of tyres are beginning to find this out.

Over-high Wages and Restriction of Output.

The next time a hue and cry is raised against the coloured races for not putting in all the hours per day, or days per month, that the employers in the tropics with work to be done would like to see, it will be as well to remember what shameless slackers white labour has proved to be when its help was most needed to make the world go round. When rubber was 10s. and 12s. per lb. it was thought that immense increases in output would result from the Amazon Valley, whereas just the opposite was often the case, because when the *caboclo* receives what money or luxuries he needs, or considers he needs, like the workmen here, he sees no further necessity to work, and so went on a *fiesta* until his money was spent. As it is, therefore, in the uncivilized zone, so it is with labour, civilized or not as you prefer, over here; the more money they get the less work they do. High prices on this side naturally are restricting orders, but labour does not trouble; it goes for a holiday until the orders have accumulated and made it worth while to come back. This does not seem to be the case in quite as marked a degree with the rubber industry, but it seems so with other industries which affect the demand for rubber. All this shows, firstly, that the workers are receiving more than a fair remuneration, and secondly, that they are willing to let all the world suffer—producers abroad and consumers at home—rather than do a fair day's and a fair year's work to help. Until German competition gets on its legs and cuts English trade from under its own feet this will continue. Those abroad, therefore, who, having helped to win the war over here, have gone back to work hard and help win the peace, cannot but be disgusted at the way the peace is being lost to Germany by labour at home.

The Slump in Trade and how it is being Aggravated.

We mention these points on this page because, if other necessities could be produced at a fair level of costs, more money could be spent by non-slackers on tyres and other rubber goods. Even these half-timers, if they did as much work as other people, could, as is done in America, buy motors and "run-abouts", far more than they do, and so help break the railway and tram clique which has now stepped into the ring to add to our troubles.

Before we have had time to get over the effects of the moulders' strike, the papers report that rather than lower costs so as to enable the public other than the working classes to buy more of the necessities of life, most of the Black Country factories closed down on July 31st for a fortnight's holiday, the longest on record, due to slackness of trade (a slackness due to needlessly high prices).

Owing to a slump in orders, also because prices are

overpoweringly high, the big engineering firms in Sheffield have closed down for ten to fourteen days, and some hundreds of men have been suspended. Shipbuilders in the North have cancelled big orders because the cost of construction has risen to four times the pre-war rates. French customers are placing orders with Belgium and Holland to avoid the ramp in British steel prices.

A Northampton correspondent states that the boot workers are taking an extended holiday this August, and most of the factories are closing down for a fortnight. The present high cost of living does not affect the wage-earners because they are being paid on a level with, and in most cases at a higher level than, the high prices which their wages help to bring about. The effect on British trade, just when we could be and should be supplying the world, is, however, appalling, and in no department more so than with the motor trade and rubber goods. No wonder that a single steamer can bring two hundred cars from America, which, in spite of the high duty, 33⅓ per cent., are purchased here with avidity, and that whilst American makers are knocking £50 and £100 off the price of their machines, the price of the home-made article is beyond popular pockets. In the old days Nero may have fiddled whilst Rome was burning, but to-day the manufacturing industries are behaving just as indifferently with regard to the future prosperity of England at home and in the tropics.

The Low Price of Raw Rubber.

The slackness that prevails every way, both in local municipalities or in the highest circles, culminating as it has done in two cases; with the hash in Ireland and the stew in India, is also having its effect in development work. Those who are ruled are losing confidence in and respect for their rulers. It is difficult to say where the fault lies; you can only go by results. No one can say the results are proving satisfactory. Middle-class and lower-class rule has still to win the peace against the Prussian aristocratic policy which at least eliminated the slacker, except perhaps in the Prussian Royal Family, which no one troubles about. Like the appendix in the human body, the Hohenzollerns are and always have been an amazing nuisance, especially because you were never quite sure why they, like the appendix, were created, or what would happen when they were removed. The Prussian Royal Family was, of course, a particularly offensive "appendix," but one is beginning to wonder whether, bad as they were, the policy of which they were simply the figurehead, may not again win in competition with the policy of drift and slackness in this country, the effects of whose policy is being reflected in every branch of our industry.

What is Wrong with Rubber.

So far as one can see and hear, the rubber industry has done better than most in its endeavours to keep its end up in spite of high costs, including those over which it has no control, such as transport, local and Government taxes, &c. But for the various reasons outlined in the previous paragraphs, and especially the uncertainty with regard to labour and the inability or unwillingness of the authorities to treat all classes and all workers alike, everything has come or is coming to a standstill and, mule-like, refuses to budge. We need cotton for rubber tyres. Who is growing any? We need far more sugar to help sell our raw cacao. Except the Tata proposition in India, who is trying to remedy the position, except by talking, which only hinders? So it is with rubber. We want, at fair prices based on 1s. 9d. to 2s. per lb., rubber, thousands of bicycles and little "run-abouts" on the streets now that the train and tram fares are so high. The latter, at least, in the district where these notes are being written are far worse than the increased railway fares. It is easy to realize, therefore, what a demand there would be for bicycles and popular-priced cars were such things procurable. Knowing, however, how restriction of output and the mania to keep prices above the purchasing power of all but profiteers and those paid by the hour are keeping down the demand for raw rubber on all sides, buyers are keeping aloof of the markets, and so the producers suffer, because the workers on this side are not "doing their bit" to help win the peace. Just when everyone was hoping to see two or three tons of rubber asked for in place of one, everything is as flat as a pancake because the price of motors and everything else is far too high. Taking advantage of of this the trains and trams seize the opportunity to advance their rates. In pre-war days incompetent managers had "the sack"; now the sack is passed round to be filled by tax and ratepayers, who are forced to fill it instead of buying a motor cycle or even a push bike.

Municipal Corporations help the Slump.

Judging from the way we are being handled, the public evidently are losing confidence in their local authorities to an even greater extent than in the Government itself. Corporation loans are not proving a success. The much-advertised 6 per cent. Housing Bonds are not drawing subscribers as well as was expected—expected, that is, by the authorities, but not by the man in the street. The latter, seeing how the tramways are mismanaged and 'buses are discouraged, very wisely puts his money anywhere and everywhere but in Corporation stock and Housing Bonds. We are beginning to realize that "gas" has no stability. We are all "gas" now, and when the effects become too apparent it curtails confidence, and causes those with money to refuse to part with it. Foreign exchange troubles are also helping to check demand, so is a tendency, in these days of slow locomotion and congested wharves, for continental buyers to shuffle out of their bargains when prices have dropped since the contract was signed; and so all these and other evils are working to keep down the value of raw rubber, at present the Cinderella among tropical products. Cacao did have its fling since the Armistice. Accra cacao, which was lower when the war started, did have its "run-up," but not so rubber; it was higher in July, 1914, than it is now, and never had the pleasure of running up like cacao and other produce.

The current number of the *Bulletin of the Imperial Institute* (John Murray) discusses in detail the possi-

bility of utilizing the large quantity of seed now being produced on rubber plantations. In the early stages of the rubber industry in the Middle East the seeds were mostly used for raising plants for making new plantations, but as there are now at least 1,000,000 acres under rubber trees, the quantity of seed available is much in excess of the planting requirements. It was shown many years ago by investigations made at the Imperial Institute that the kernels of Pará rubber seeds yield a large amount of oil similar in properties to linseed oil, and that this oil can be used for paint-making and other purposes for which linseed oil is employed, whilst the cake which is left after the oil has been removed from the kernels is an excellent feeding stuff for livestock. Until the last year or two the oil had only been produced on an experimental scale, but at least one oil mill is now established in Malaya for crushing rubber seeds, and small commercial consignments of the oil have been sold recently in this country and in Marseilles at good prices. Whether it will pay the planter to supply the seeds to an oil mill depends very largely on the cost of collection, a point on which experts differ. In view of the present necessity for the exercise of rigid economy on rubber estates and of the enormous demand for oils and feeding stuffs, it is highly desirable that serious efforts should be made to organize the collection of Pará rubber seed wherever it is likely to prove at all profitable, and so prevent waste of material which is undoubtedly of considerable value.

According to Messrs. Lloyd, Matheson and Carritt, on the resumption of business after the holidays, the London rubber market proved quiet, but with a firmer undertone and a better inquiry for off grades. Crêpe was still in greater demand than sheet both for spot and forward positions. During the following week, ending August 14th, after opening with strong buyers of Standard sheet and crêpe for both spot and forward propositions at about 1d. per lb. better than at the close of the previous week, prices reacted, closing about ¾d. per lb. below the best. Following that prices have kept steady, but until there is a distinct revival in trade both here and in America, there is little chance of a substantial rise on the top of the present low prices.

Spot Quotations—	*Aug.* 19, 1920	*Aug.* 5, 1920	*Aug.* 14 1919
	s. d.	s. d.	s. d.
Smoked sheet (F.A.Q.) ...	1 10	1 8½	1 10½
Crêpe (standard quality) ...	1 11½	1 9¾	1 11½
Pará	1 9½	1 10	2 5¾

Rats and their Ruin.

Why not distribute Virus by means of Aircraft?

Of late much more has been written about rats and the mischief they do than formerly. This is probably on account of the food they destroy every day, month or year when the "humans" in some places are almost starving, whilst in no country is there an over-abundance. Mr. J. Laker Macmillan, F.C.S., of Sydney, gives the following figures in the *Australian Sugar Journal* for April 9th, p. 35, of the harm done by rats, speaking of the agricultural districts alone and exclusive of the harm done to merchandise and property in cities and towns, where the loss occasioned is considered to be well-nigh incalculable. When it is claimed that the progeny of a single pair of rats exceeds 600 in a year (surely this is a mistake), the marvel is that anything or anyone, but the rats, are left on the earth.

Annual Monetary Value of Damage by Rats in Agricultural areas alone.

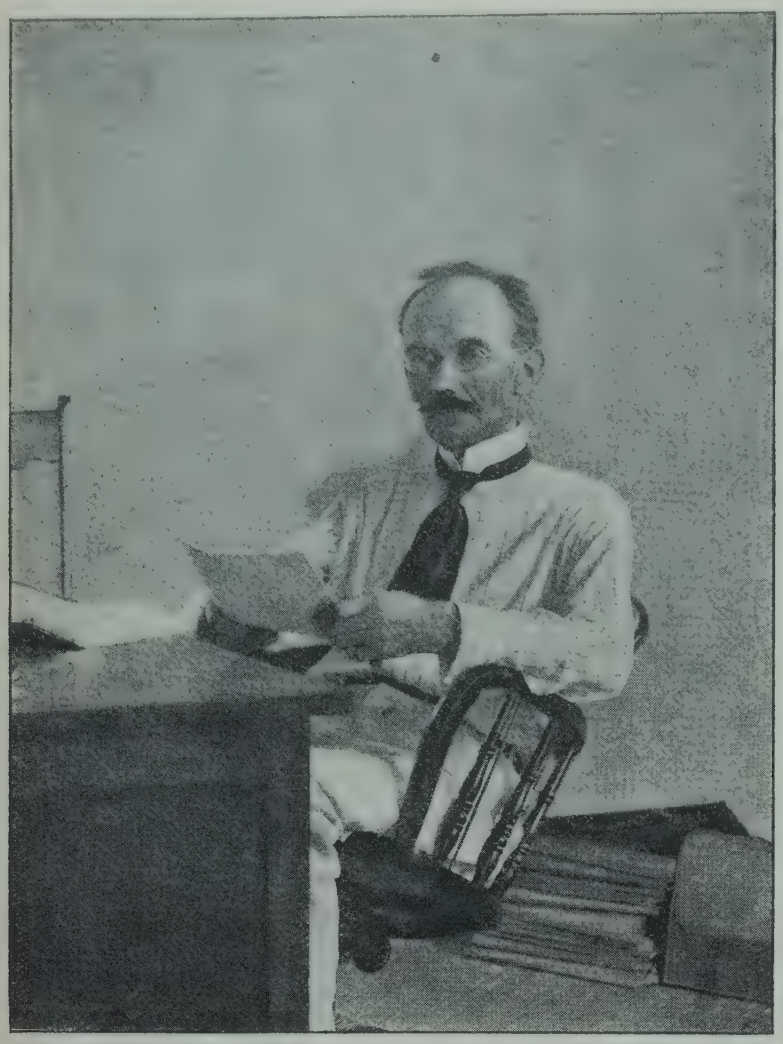
In Great Britain	£ 15,000,000
U.S.A.	200,000,000
Germany (in 1904)	10,000,000
France	8,000,000
Annual loss to agriculture alone in only four countries	£233,000,000

New South Wales lost £1,780,000 through a mouse plague, Copenhagen in Denmark is said to spend £800 a year on rat extermination, and to save thereby £49,000.

Strange to say this country has not come prominently to the fore with an anti-rat bacillus or poison as elsewhere. Nor have, when you come to think of it, America (by far the worse sufferer in the aggregate if not *per capita*), or Germany, the home of economic research. Northern Europe seems to have done the most in this work, with the bacillus of Leoffler, Sasser, Danysz, Neumann of Aalborg, and of Issatschenko, said to be largely used in Russia. These are the best known from all accounts.

Meanwhile the pest is not unknown in the tropics. At one time the Danysz virus, Messrs. Evans of Liverpool, and a Danish firm (Ratin), used to work with us to push the use of their preparations throughout the tropics, but one by one they withdrew on account, so it was said, of complaints that the virus did not keep. This we found difficult to believe, since Mr. Moors of Samoa, with whom everyone is acquainted at least by name, if they know Samoa at all, used one or other of these virus on our recommendation, and was delighted at their success. At the time we published details because of the age that any virus must be when used in Samoa, but especially the tubes as used by Mr. Moors, for he got them from Fiji and then had to go, when he was ready, with them to Samoa. To get to Fiji (Suva), the preparation went to Sydney and thence, when a boat presented itself, to Suva. If under such trying circumstances rat virus keeps and proves even reasonably efficacious, it must be worth trying much more than is being done anywhere and everywhere. If not, what is the reason? If the preparation must be so very fresh, and since the loss by rats is, as shown, so fearful in these days when every loaf of bread should be three, surely a Handley-Page or two can be chartered and sent round the world with supplies of one or other of these makes of virus, which should then arrive in the "pink of perfection" (unless affected by the cold in the upper atmospheres), and satisfy even our friend and mortal enemy—the rat.

It is reported in the London press that the price of tea will be increased to the public by 50 per cent. this winter; yet, we are told, whilst prices were never so low to the grower the distributors on this side are already coining money.



"Tropical Life" Friend.—No. 182.

MR. R. S. CUNLIFFE, B.Sc.Edin., &c.

Tropical Agriculturist.

MR. CUNLIFFE, in his time, has played many parts, but all connected with agriculture and horticulture in the tropics. He reviewed our first book on "Coconuts" in the organ of the Trinidad Agricultural Society, then we remember him as chief of the Department of Horticulture in Cuba (*estacion experimental agronomica*), and now he is back again in Trinidad as tropical consultant in connection with economic botany.

Born in 1870 in Partick, now a borough of the City of Glasgow, it is not surprising, since he hailed from the Clyde, that "Our Friend" should have sprung from a shipbuilding stock. The present well-known firm of the Fairfield Shipbuilding Co., of Govan, was raised on the foundations laid by his grandfather, the late Mr. R. S. Cunliffe, of Carlton House, Stirling, and his co-workers. His father, again, was Chief Engineer of the works at Govan where "Our Friend" was born, but removed later to Port Glasgow, where he became senior member of the shipbuilding firm of Cunliffe and Dunlop. On his mother's side, Mr. Cunliffe hails from the Clan Macgregor, and his forbears were connected with the old cotton-spinning families of Scotland.

But the "Wee Macgregor" soon got moving. In 1880 he was at Edinburgh, then at school in Warwickshire. In 1887 he was back in Scotland, and entered the Heriot-Watt College as an agricultural student, passing the next year into Edinburgh University, where he graduated with his B.Sc. in 1892. Meanwhile he had passed the necessary examinations, and thus obtained the Diploma and honorary life membership of the Royal Agricultural Society of England and of the British Dairy Farmers' Association, and also obtained the certificate of other Scottish societies.

On emerging from the University, Mr. Cunliffe made several trips overseas and visited, among other places, the Canary Isles and the Southern States of America. He was at Montreal in July, 1894, and journeyed west to the Pacific coast, visiting British Colombia, settling in Alberta, where he took up practical farming, married into an Irish-Canadian family, and saw several years of the prairie farmer's life of those days, and was on the spot during the boom times of the rush to Klondyke.

In 1908—with his family—Mr. Cunliffe went to Cuba and took up scientific horticulture. Then it was we first heard of each other, being mutually interested in fertilizer experiments in connection with crop-raising. The acquaintanceship was renewed in the same way in Trinidad, where "Our Friend" was manager of manuring experiments throughout the West Indian islands south of Porto Rico, as well as in the Guayanas, Venezuela and Colombia, a pretty extensive field to get busy on. After the outbreak of the war in 1914 he crossed to the United States, and the next year found him established as Chief of the Department of Horticulture in Cuba, under their Government. Those who know what Cuba has done in the way of progressive fruit and vegetable cultivation whilst the war waged in Europe need not be reminded of the useful work Mr. Cunliffe did out there until he resigned his position, if we remember rightly, on account of the interference by some of the local politicians into the affairs of the station which was not compatible with progress.

And so—in the autumn of 1918—Mr. Cunliffe once more found himself in America, only to leave it very soon, for last January he was back again in Trinidad as delegate for our mutual friends, the Chilean Nitrate Committee, having first acted for them in connection with some work in Louisiana and Texas, and there the story ends for the moment.

Like ourselves, Mr. Cunliffe is a great believer in the possibilities of Trinidad (and elsewhere throughout the British West Indies) as a progressive sugar-producing centre, but—everything must depend on the methods employed, and to help encourage the planters to employ only the very best methods is why "Our Friend" is once more established in Trinidad. Sugar, of course, is but one of many crops grown, or which could be grown, with considerable profit in Trinidad and throughout the West Indies, where, with his long years of practical experience and his scientific training, we believe that the services of Mr. Cunliffe will be to the good of the cause and prove of great value to the islands and their planters, especially when Trinidad gets her Agricultural College, for it seems that, after all, it is to be Trinidad where the College is to be established. The site is, we believe, already decided upon, being a portion of or adjacent to the St. Augustine Estate, near St. Joseph (the old Spanish capital of San José de la Vega), where the Government has an experiment station. And so endeth the first chapter in the history of Agricultural Colleges in the British Tropics, just fourteen years after that history was started.

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1.—The address of Tropical Life is Messrs. Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.

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3.—All **business communications and payments**, either for subscriptions or advertisements, should be sent **to the Publishers** of Tropical Life. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

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5.—The Advertisement Department is at 112, Fenchurch Street, E.C., where all inquiries respecting advertisements, charges, &c., should be addressed c/o the Manager of the Department. At the same time will advertisers kindly note that all copy and blocks for advertisements must be sent to 112, Fenchurch Street, E.C., before the thirteenth of each month, failing which, insertion of same in current month cannot be guaranteed.

6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Advertisers are only entitled to three changes of matter in the year of twelve issues, unless (1) they send electros for insertion, or (2) are willing to pay for the cost of setting up the advertisement. Owing to present high cost of composition and printing work we cannot depart from this rule.

8.—Changes of address should be promptly notified.

9.—Non-receipt of copies of the Journal should be notified to the Publishers.

10.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

August, 1920.

India—Prospects of an Immediate Increase in her Output of Sugar.

By the Editor.

Since the appearance of an article in the columns of the London *Confectionery Journal* on August 14th on "India and her Sugar Supply," and Dr. Barber's letter over a copy of his article to the *Times* on the same subject, which was published in the above paper on October 9th, things in the sugar line have not been idle in India.

This has been the case more particularly in connection with propaganda work to stimulate useful and permanent interest in the industry over there so as both to increase the output of *gûr* as well as (and perhaps more especially) of sugar, although far too little is known on this side of the heavy spade work put in out East to help increase the world-supply of that much-needed article.

Those who require large supplies of sugar as their raw material must watch the march of events whether they tend to smaller supplies, as will be the case, from all accounts, in several important centres during the 1920-21 campaign, or whether they lead us to hope for larger outputs in a year or two, if not next year. What must, above all things, be done is to stimulate and support the efforts of those who are trying to support us by increasing supplies where possible. No centre, apparently, can do so more rapidly and on a larger scale than India, all success, therefore, to those who, like the firm of Tata at Bombay, are "out" with a £5,000,000 scheme to increase that country's sugar output. In clever, capable hands much can be done with £5,000,000—outside of any Government-aided plan. But I will deal with that later on. What I want to discuss now is why other firms in India or elsewhere should follow Messrs. Tata's example, and especially why the sugar estates in the West Indies should try and work under one head—say Sir Edward Davson—as our armies did under General Foch at the front. If this were done in the West Indies as is being done in India, both the money could well come from the people over there, the merchants and their friends, all of whom have done very well since 1914, as they deserved to do, and having done so, let them put their industry in order. Doing so will help the Empire and benefit themselves.

Coming back to India, it may be remembered that Dr. Barber, in his article to the *Times* already referred to (which was written just after the doctor had retired from his post of sugar-cane expert in India), criticized my views as being over-optimistic regarding India's capabilities as a sugar producer on an increased scale. In face of this it is interesting to note that whilst the *Madras Mail* supported Dr. Barber, the *Economic Journal* of Mysore (a Government publication issued monthly in this independent native State) has supported my views on the situation.

Honours, therefore, appear to run easy between these two views, whilst the discussions that they have managed to raise cannot but benefit both India and those who need more sugar. When writing on the matter, the *Madras Mail* has devoted at least three leading articles on my views as criticized by Dr. Barber, and especially those contained in "The High Price of Sugar." The first of the leaders in the *Madras Mail* was in their issue of March 27th last year, a second last April, and the last as recently as June 3rd of this year. In the first article, quoting Mr. Wynne Sayer, assistant to the Agricultural Adviser to the Government of India, we are told (ex Mr. Sayer's article in the *Agricultural Journal* of Pusa) that if India would only follow the conditions laid down, she would once again take her place among the sugar-producing and exporting countries of the world instead of having to import about 800,000 tons to make up her own deficient supply, and that she could do this without adding an acre to her existing can-growing areas.

This sentence was used by me to confirm the views already expressed on India's ability to increase her sugar supply at once by adopting more up-to-date

methods and not by increasing the area under cane. I called upon India to increase her output for two reasons: the first financial, the second from a sense of equity towards others. The first is because, if India could only manage to produce that extra 800,000 tons of white (or other) sugar that she is at present importing, a similar quantity could go, instead of being consumed in India, to satisfy the craving needs of sugar in Europe. Furthermore, if to this could be added another 500,000 tons (by no means an impossible task) she would have been—even in 1916—anything from £26,000,000 to £40,000,000 a year better off, and how much more so to-day. The second reason hits harder at the base of the trouble of short supplies owing to the shortage of labour outside India (see p. 37 of "The High Price of Sugar"), viz.: "It is not too much to ask India, if she stops or restricts emigration to our Crown Colonies (which has been done), to rouse herself and produce far more sugar in the future than she has done in the past, in order to make up the deficiency elsewhere that the absence of her labourers may bring about."

"Here in India," Mr. Wynne Sayer stated in 1916, "we have an industry which badly needs capital to enable it to expand, and the fact that the Agricultural Department's experiments and the assistance available from the Government sugar experts have made it possible to overcome many obstacles which formerly obstructed the progress should greatly assist in the bringing in of fresh capital which is essential to development." The successful flotation of the Tata scheme shows how right Mr. Sayer was. Once the war was over no time has been lost The money subscribed will help those who have benefited by this Government work. We must hope that the public, who will get fat dividends, and the buyers who will get more sugar, will remember what they owe to these Government experts, Dr. Barber, Mr. Wynne Sayer, and many native experts also.

It was a native member of the Imperial Legislative Council at Delhi, by the way, who, on March 17th, 1916, moved the following resolution, which, put briefly, was: "That the Indian Government be urged to take measures to (1) increase the cultivation of sugar-cane and date-palms, (2) to encourage and extend the manufacture of sugar, both refined and unrefined, by existing or improved indigenous methods, and (3) to promote the starting of new sugar factories, &c."

And now in answer to all these calls upon India to come forward and do her bit we have the Tata concerns, known as The Sugar Corporation of India, Ltd., capital five crores of rupees or £5,000,000, with the rupee at 2s. (1 crore = 100 lakhs. 1 lakh = 100,000 rupees) of which £200,000 only was offered in May and subscribed for, we are told, some seven times over. Mr. R. D. Tata is the chairman, and among the eight directors is Sir Alfred Chatterton and Sir Sassoon David, Bart.

So far as I can gather, it is reckoned that the ample financial resources which will be and, in fact, which are at the disposal of the Corporation will enable it to command the services of the most competent experts in all branches of the industry, and that the services of such experts will be secured, whilst everything in connection with the planting and manufacture will be efficient and up-to-date. A large increase in the output of cane is looked for. Irrigation works where needed will be installed; this alone means much in the way of helping on big yields. The last word in machinery and in the processes in use in Java and elsewhere will be employed first of all to extract the juice from the cane, and then in the making of the gûr or sugar. The rising generation will be trained as growers, as sugar factory engineers, and as experts in the factory routine. What an excellent programme! May great success wait upon their efforts.

There are, the prospectus pointed out, roughly speaking, 3,000,000 acres of land under sugar-cane cultivation at present in India, yielding about 3,500,000 tons of gûr, equivalent, at the outside, to 2,500,000 tons of sugar. That is to say (exactly as was pointed out in "The High Price of Sugar"), India produces considerably less than one ton of sugar per acre under cultivation, whilst in Java, by methods which the Indian Corporation proposes to adopt, the yield of cane has been increased from under two to over four tons per acre.

The Corporation proposes to establish gûr or jaggery factories in tracts where from 500 to 1,000 acres of cane is likely to be available, and to put up mills for turning out sugar where anything over 2,000 acres of cane can be initially obtained. Evidently they will go in largely for cane-farming, i.e., to buy from the ryots and small or large land-holders who merely grow the sugar-cane to sell to them, as is done in Trinidad and elsewhere in the West Indies, and also in America and on the Continent with beets. As many as 700 to 2,000 different growers are on the books of some of the large factories, each one of whom regularly send in their quota to make up the whole.

India, therefore, it can be felt, is now on the high road to success with regard to sugar production. She has one of her leading firms about to start a £5,000,000 scheme; she has further wealth galore to add to this; she has got some of the cleverest men in her midst and means to draw in others; if her existing methods are not up-to-date or otherwise perfect, experts in India know where to go for the best machinery and te best methods; they are probably hard at work now arranging to make use of them. It is all these and other facts which made the author of "The High Price of Sugar" claim that India could, without increasing her area under cane, produce 5,000,000 tons of sugar (not gûr) a year, and later on, if she produced 11,000,000 tons as her crop, she would still barely have done so well in comparison to her latent possibilities as Cuba or Java have already done with theirs.

No doubt India as a country, like Japan, China and the East generally, has done well over the war, and especially through the rise in exchange moving so tremendously in their favour. All this, however, is now a matter of history, and the rupee has dropped below 2s. again. Let us on this side, therefore, support all the efforts being made to encourage sugar cultivation on up-to-date lines in India (or the West Indies) whilst this additional wealth is still obtainable, and so spread the prosperity (of the compara-

tive few) throughout the general population of the sugar-producing areas by increasing the number of cane farmers. Doing so will safeguard the confectionery and other industries in the United Kingdom and throughout the Empire which are dependent on sugar for their raw material, and will add great strength and purchasing power to these sugar centres abroad, which will again tell in our favour as tending to open up entirely new channels of demand for our machinery and other goods, as well as extending those already existing. Cuba's exports last year, chiefly sugar, with tobacco (also an important crop in India) a long way behind, exceeded £100,000,000, against which she received £70,000,000 of imports, whilst the bond value of the sugar imports into the United Kingdom is put at £54,000,000. What splendid prospects, therefore, are open to Messrs. Tata and the multi-millionaires of India to go in and win in a friendly competition with Cuba to see who will be putting out the most sugar for the British and other markets in 1925 and 1930. If this is so in India, why not elsewhere, if the labour trouble can only be overcome by settling the labourers—say in British Guiana—on the land from the start as cane farmers and not forcing on them the old-time barrack or compound life, with its many drawbacks and few advantages, especially when compared with each man—best of all each family—on their own piece.

Labour, Capital and Food Supplies.

We have, on many occasions, claimed that ex-soldiers, married or single, and if with children to help them, all the better, could in many cases do far more to help themselves and the Empire by going to the tropics, as cane-farmers and small cotton-growers, than by staying over here in offices and factories or as tram and 'bus conductors and a score of other occupations in which demobbed women could do as well as the men and be glad of the work and pay. This Empire and its people can never prosper if the bulk of the public are simply going to live "the easiest way," which means that they largely sponge on the energy and enterprise of others, who alone create new wealth and so add to the purchasing power of the world—when these latter succeed—and thus lead a regular barnacle existence which, attached to the ships of State and Commerce, hinders their progress and ability to race ahead of our competitors. When a ship is lost or is on the scrap-heap, those barnacles will die; meanwhile, what can be the advantage of such an existence? Neither the Empire nor the ship can go at its best when such hindrances hang on to them. Can anyone pretend that those who bring about these hindrances care so long as they squeeze out the last penny and do as little work, especially mental work, as possible in return—thus are great nations ruined and, worse still, they are disgraced.

Thus co-operators and co-operative societies refuse to pay their share of taxes. At the fifty-second Co-operative Congress, we are told, members spoke out strongly on the attempt that is constantly being made—and a perfectly just one too—to tax co-operative funds either by Income Tax or the Corporation Tax. Co-operative societies may be excellent institutions for the labouring classes, but they are, as now constituted, a mighty big barnacle on the prosperity and equitable administration of the Empire.

The paper from which we gather this note also had an article on "Sugar Production under Capitalism." This contemporary is entitled *Justice*, costs twopence, is described as a Social-Democratic Journal, and published from 36-38, Clerkenwell Green, London, E.C.1.

This is what it says on sugar production under Capitalism: "The object-lesson is that we now have a situation where the capitalist system is openly standing in the way of a plentiful production of sugar which all need—and wheat is rapidly drifting into the same situation." Anti-capitalists are always telling us that Capital is as nought and that Labour is everything, produces everything, and should rule everything. Well, why does it not do so? The last item it is certainly trying to do, but no one, not even Lenin, or Trotsky, Ebert or the Germans, can rule a people with empty stomachs. Let them therefore start to produce first and begin on three crops: wheat, sugar, cotton. They do not need capital or the capitalist, as they say these are an impediment and a menace to the world. Very well, let them prove it and start to produce crops, and then when they do so, and can clothe and feed the world, then, but not until then, let them rule it. We are quite sure when they have done the first task satisfactorily, we shall feel that they can do the second equally well.

If they do not "funk" the job, because it is not "cushy" enough for them; which Labour, especially aggressive Labour, will do to a man; it might be useful to point out how a start can be made so far as the mechanical side is concerned, though how Labour can go ahead without Capital, it is beyond us to imagine. Allowing, however, that Labour knows what it is talking about, its leaders should ask Mr. C. Jesson, M.P.,[1] one of their members and also, I believe, a Fellow of the Royal Colonial Institute, for a copy of *United Empire* for June last. Having secured this, turn to p. 283, and read Captain J. S. Kingsell's excellent article on the Fiji Islands as an Imperial Opportunity. Those who do this, if they really care one jot for anything but their own selfish daily comfort—and selfish daily comfort does not mean ultimate interest even for the selfish individual—must realize that the Empire to-day needs every man who can be spared to go forth and produce crops of economic importance—and all can do so on the lines laid down—especially wheat and cereals, cotton and sugar. If prices fluctuate and lean years come, what of it? The objectionable capitalist has to put up with such things and even to go down under them. Labour, therefore, which is so superior to capital, must be able and willing to bear these same risks unless, of course, their greater knowledge enables them to avoid such losses which should be possible. Having no

[1] It cannot really be said that Mr. Jesson represents a Labour Union and therefore labour in the true sense, beyond that his members have to do some work for the money received and musicians certainly do a great deal. According to his card before us, Mr. Jesson is, or was, the London organiser of the Amalgamated Musicians Union, a professional class, if ever there was one.

capital they cannot lose their money—only one is dying to know how they can grow crops without it. If they will but offer to prove that Labour does not need capital, we are sure land, and entire islands will be placed at their disposal to go and live on and rule whilst proving their statements by producing cotton and sugar without capital. The world would even send them, for a number of years, meat, bread and tea for nothing whilst they did so, if progress was apparent. Of this we feel certain.

Going back to Captain Kingsell's article, this is what he tells us:—

"Under what is commonly known in India as the 'Zamindar' system, a planter sublets his estate, in small areas, to small cultivators who do the actual cultivation. In Fiji the proprietor of the plantations, say, the Colonial Sugar Refining Company—which devotes a great deal of attention to the 'Zamindar' system—has hard-and-fast agreements with its lessees, and divides the land into workable areas, providing necessary residences and buildings for a small farm. The areas are so allotted as to leave the cane-fields fairly compact, in order that operations of tilth, cutting, &c., may be economically performed. Usually the bulk of horse-work (ploughing and drilling) is done by the Company, and the charges therefore made as a set-off against the crop. This system of share-farming is proving a solution of the labour problem, and the results are better. A man will produce better results on a proposition in which he has a personal interest, as against one in which he is paid but a daily fixed rate. In addition, he has his own home, and can indulge in side lines, such as the production of maize, rice, tobacco and cattle.

"At the present time, when the question of absorbing the vast number of unemployed soldiers and sailors is all-important, I do not hesitate in suggesting action on the part of the Government in the direction of establishing farms in these islands (Fiji), and settling thousands of men in a congenial and profitable occupation. The field for employment is immense, and careful enterprise on behalf of the Government would not only result in a solution to a great extent of the unemployed problem, but would lead to a wide development of an Empire asset. The present shortage of sugar also justifies a move towards the greater production of this commodity. There are many suitable areas in Fiji that are adaptable to any big scale of operations. Also I know that these big sugar-producing concerns at present operating would welcome a Government-supported scheme for the growing of sugar-cane. The Colonial Sugar Refining Company have ever adopted the attitude of a 'sugar manufacturer' as against that of 'cane producer.' They want the cane, no matter who grows it. I am convinced that they would hand over large areas of cultivated land to provide a nucleus of a scheme for the settlement of soldiers.

"It may be averred that the tropical climate of Fiji and other islands would preclude white men from working there. It is not the case in regard to the places specially mentioned. White men work as hard as any black man, if not harder. The drivers of locomotives, platelayers and bridge-builders on railways, engineers, boiler-fitters, and the hundreds of mechanics in and around sugar mills—these men toil daily in circumstances less congenial than labour in the open on a cane-field."

A good class of cotton could be grown in the same way, not in Fiji, but in Uganda or elsewhere, and the same *R.C.I. Journal* has an equally good article by Sir Robert Coryndon (a paper read before the Fellows with Lord Milner in the chair), so that the Labour man has his choice. In one or other of these articles many crops are discussed, maize, bananas, sisal and so on. Run on co-operative lines by men who do not, as over here, shuffle out of paying their share of the taxes, much could be done with able, willing, keen men and their wives and children in the Tropics if they really mean to make good. Wonderful to say, this could be done still better—in our opinion—if the Capitalist were allowed to come in and help. This may be hard to believe, but it certainly would be so, if only Labour would really labour as Capitalists have to do, and be willing to take their share of knocks and risks, anxieties and discomforts as capitalists also have to do until they feel their feet.

Latin America and her Dictators.

THOSE interested in Latin America know quite well that events are moving there, to a lesser degree, perhaps, historically speaking, than in Europe, but not in a lesser degree as regards local importance, and the tendency for more popular forms of governments to be introduced over there as on this side. Whether the introduction will lead to permanent residence either in Europe or in Latin America is more than we pretend to know.

Now Manuel Estrada Cabrera has been removed from power in Guatemala after an unbroken rule of twenty-two years, that is since he practically appointed himself to succeed Barrios, his predecessor, assassinated in 1898. Whatever faults Cabrera may have had, and his enemies put up a good long list against him, he certainly was no pro-German. Writing of him in the *New York Tribune*, Mr. T. R. Ybarra, after describing him as the Last of the Latin Dictators (Cabrera was born in November, 1857, at Quezaltenango in the interior, and so will be 63 this year, and still a grim strong man with plenty of fight in him), goes on to say:—

"During the great war, the Guatemalan dictator, according to report, was instrumental in nipping in the bud a German plot for causing revolutionary outbreaks throughout the five Central American republics and extending them, if possible, to Panama and Colombia. The German Minister at Guatemala, Herr Lehmann, was said to be the master-mind behind this plot, and Herr Eckhardt, German Minister at Mexico, was also named as one of its instigators. Cabrera, it was said, got wind of it, warned the United States Government, and thus effectively blocked its progress."

Ybarra was right to say that in the firmness of his rule and in his determination to kill before he was killed, Cabrera rivalled and even outstripped Francia, the Dictator of Paraguay. Whatever his political opponents in Guatemala may have up against him, it must be said that, as with Porfirio Diaz in Mexico, Guatemala has gone ahead under the firm rule that has been dominating it. All the leading Latin dictators have been harsh, but

possibly their opponents were harsher than them. Run your mind over the list and figure out their lives: Diaz in Mexico, 1876—1880, and again, 1884—1911. General Gonzales, Ybarra reminds us, was President there from from 1880—1884. Francia, as sole arbiter and dictator of Paraguay, from 1814 to 1840. Rosas in Argentina, 1825—1842, and Guzman Blanco in Venezuela from 1870 to 1880, when Rojas Paul came in, and was still there when "we" went to Venezuela in 1890—1891. And then came Cabrera, who has been "pushed out" quite recently, and now there only remains Vicente Gomez in Venezuela. Anyone who know Latin America is aware what this man did for Germany against us, and seems to have flourished as a result. It must be about a dozen years or so since Castro was hounded out of Venezuela, and the very pro-German Gomez put in. Strange to say, all the world, Allies and Germans alike, seem content to see him remain. One wonders why.

There are many leading commercial and financial authorities who do not even know these men by name, and are quite ignorant of the part they and their opponents have played since the days of Bolivar to make Latin America what it is to-day, one of the worse-managed but one of the wealthiest continents of the world, judged by our standards, but since Europe has tended to follow the South America example of being turbulent and generally unmanageable, one is not so sure that the one people can fairly criticise the others quite so keenly as they have been wont to do. Meanwhile it is very foolish not to follow current events in Latin America closely, and to have a fair knowledge of its past history since the days of the Spaniards. You cannot properly understand and trade with the people over there if you do not. And to-day, only an ignorant man can deny that there is more money to be made south of Uncle Sam's territory than in any other portion of this globe in the near future.

"My Old Dutch," at the Lyceum Theatre, is the play that will kill divorce, claims Mr. Albert Chevalier, who wrote it in partnership with Mr. Arthur Shirley. But why it should kill divorce is not clear. What it should do away with—for ever, is the abomination of dividing old couples in the workhouse, if they do not wish to be separated as Joe Brown (Mr. Albert Chevalier) and his Old Dutch (Miss Alice Bowes) certainly did not wish to be.

In the play all ends well, but in real life it does not. One is told that the law says the old couples are to be together, but no one seems to have heard of a case where they were left so.

If you want to see a perfect representation of a coster "Donah" (a word we take it that, like "Mona," comes from the Italian Ma Donna), go and see Miss Alice Bowes at the Lyceum. Do not be too long before you go or the play may come off. We consider that as the young coster girl she is as good as Mr. Chevalier as Joe Brown. What more can be said?

It is stated that the waste molasses produced in Hawaii alone amount to about 135,000 tons per annum, sufficient to produce about 9,000,000 gallons of industrial alcohol. What, therefore, can the total waste from the world's sugar-cane estates be, since they, even to-day, give us 12,000,000 tons of sugar, of which Hawaii produces only 500,000 tons, or less than one twenty-fourth?

Trade, Politics and Finance.

It is difficult to say which is the culprit, but one of the above great three is all wrong, so that the London *Observer* had to start its leader on August 15th with the following words: "In the liquidation of war responsibilities the country is finding that the last lap of the race is the hardest to run. Yet to the last lap success belongs. What has already been achieved brings no credit until the race is completed. Twenty-one months after the Armistice, over 175,000 men and nearly 15,000 officers are out of work."

Such a statement is amazing, considering the clamour going on on all sides that we have no houses to live in, and no clothes to wear at prices bearing a reasonable proportion to the low wages that all but trade unionists or Government and municipal employés receive; whether the Government staffs have had their salaries raised to the level of municipal employés seems very doubtful. Business we know is hung up on all sides, but not for want of orders. Neither, can it honestly be claimed, is business at a standstill for want of labour, in face of the above statement. One wonders why there is any check at all; why, in fact, as we outlined in our book, "How to Pay for the War," men are not tumbling over each other, not to get any sort of a berth, but to secure the pick of many which will give them what they most desire—honour, money, congenial surroundings, perhaps all three in one. Meanwhile, if any large sugar or other estate or development concern needs assistance they will know where to come to, providing they will take as good care of the men, as the men deserve to expect.

That things are at a standstill is noticeable at a glance when you walk up and down Mincing Lane, and it must be still worse up at Liverpool and at some other centres. If only you could put everything into a jar and shake them up together so as to average things out a little, perhaps more progress could be made. Cotton and sugar drag because they are in short supply; rubber, cocoa, coffee, &c., drag because there is too much of them. The rubber planter, with a motor or two and half a dozen bicycles on his estate, finds the price of his tyres are as ridiculously high as the net proceeds of his raw rubber is needlessly low. In politics Venizelos gets wounded and nearly killed, whilst the ex-Kaiser and his profligate son are snug and safe with all Holland looking after them. And so the world continues to wag; an annoying, unsatisfactory, very cussèd sort of a world. One wonders how long this last lap will take us to run.

Talking of this issue of the *Observer*, I hope all those who wish to see Africa, and the tropics generally, developed along the best lines possible both for white and coloured folk will read Sir Harry Johnstone's article (p. 9) on our rule in East Africa, and especially on the Nduru murders. We were glad to see

also the tribute he paid to the *African World*—the paper deserves it—and much more than mere lip praise. These are Sir Harry's concluding words: "It behoves our Colonial Office to grasp the East African nettle *firmly*, not to be daunted by a few white bullies among the 3,700 settlers (who have once or twice threatened a rising if some white murderer or torturer were not acquitted and let go). Otherwise, the good that is really done by four-fifths (surely we could put it at 95 per cent., exclusive of the Boers, ED., T.L.) of the white men in Africa will be utterly discounted by the wickedness of the remainder, and the harangues of the New York Negro Conference seem wholly substantiated instead of being only a quarter true."

We were sorry this meeting was held in New York, where the Irish and German anti-Britisher is so strong. You never know what is behind the critics of this country in such cases.

Coming to London market gossip, there seems to have been violent fluctuations in the cotton market, but at the time of writing a slight reaction to the excitement had set in. If ever there was a call for Brazil to start cotton planting—Peruvian, Pernambuco, and other strains—for all she is worth, now is the time. If only this country would put down £5,000,000 in Brazil to grow cotton as Tatas have done to grow sugar in India, the profits and the benefits we should get from the crops—providing always of course that the management is efficient and experienced—would be immense. With fine Peruvian around 5s. per lb., and the best Egyptian about 6s. per lb., Brazil, which could grow such nice cotton, is better able than most places to turn out just the class of lint needed for good strong tyre fabric.

As the *India-rubber Journal* said some months back, the example of some rubber manufacturers who have embarked upon growing rubber may before long be followed by their devoting attention also to increase cotton production. The present state of cotton supplies gives rise to grave doubts as to the immediate future, and points to a necessity on the part of the rubber industry to realize that in the matter of raw materials, manufacturers are almost as dependent upon cotton as they are upon raw rubber.

Leaving cotton for tea, the lesson to be learnt from recent auctions points to the fact that for those gardens making fine tea, the outlook appears favourable, but for concerns without a due proportion of fairly good broken kinds the position is by no means satisfactory. The present stock comprises a very large quantity of poor quality, stalky, red, and unattractive tea; retail trade is running on the highest cost grades, and the supply of cheap common leaf is altogether in excess of current requirements. The unsettled state of Russia and the Continent generally unfortunately affords little prospect of much demand from those quarters, and we are therefore largely dependent on our own consumption for absorbing our imports. The normal stock in the United Kingdom at this time of year should be well under one million pounds; at the moment it stands at two hundred and twenty. Decreased production of common tea is apparently the only means whereby a reasonably remunerative basis for the grower can be restored.

With sugar, "free" Crystallized West Indian has been selling at 120s. to 125s. and White Mauritius 138s., against American granulated at 140s., duty paid, or 111s. c.i.f. With coffee, the total receipts to date amount to 1,426,000 bags, against 910,000 last crop, 1,006,000 in 1917-18, and 1,601,000 in 1916-17. The export demand from here is not as good as sellers want it to be, but for the home trade prices have been "full up." East Indian have been selling up to 124s. for good middling, 127s. good bold, and 120s. pea-berry. Nairobi realized up to 112s. for good middling, 104s. for bold common greenish, and 120s. for fine colory. Low middling brownish Uganda went at 96s. 6d., good bold 100s. 6d., pea-berry 98s. 6d. to 106s. 6d. With sisal, East African sold up to £48 per ton, and Java to £57 10s. Shellac sold at 675s. for T.N. Orange, but future deliveries go down to 570s. Copper is around £94 to £96, and tin £276 or £277 for cash.

The following is a comparison of the principal points of the Bank of England at the present time and in the corresponding week last year:—

August 14th.	1920	1919
Bank Bullion ...	£123,067,552	£88,287,745
Reserve of Notes ...	14,452,665	24,897,370
Private Securities ...	73,805,565	81,222,618
Notes in Circulation ...	125,527,795	79,723,435
Rate of Discount ...	7 per cent.	5 per cent.
Price of 2½% Consols ...	46¼	52
Price of Bar Silver ...	59¼d.	52d.

The London Cocoa Market.

BY THE EDITOR.

THERE is no change to report in the cocoa position either in London or anywhere else. The only glint of light is in a tendency for Accras to be more inquired for, especially the better grades of the coming crop for delivery in December-February. At first one was inclined to think that this might be due to the hope on the part of manufacturers that things would be better in six or eight months' time, but a truer reason probably would be found in the fact that, in spite of the tons of Accras on offer now, the proportion of really good to fine fermented is somewhat small, and that when the new crop comes along it is believed that just those grades that are now missing will then be forthcoming. Whether there will be more sugar available remains to be seen, but I do not think it is at all likely that this will be so. Hopes were raised when the English ration was increased from 8 to 12 oz. per head, but as this seems to be on account of accumulations of raw sugar which are of no use to the chocolate makers, this hope went the way of many others.

Meanwhile it is interesting to note and compare what London, Havre and New York have received during those months in this year for which figures are available. Take New York first, according to Mr. Frank G. Alden of that city, they received just over a million bags of cocoa between January and May this year, against rather less than a million bags last year, and nearly 1,200,000 bags January-May in 1918. Of these totals, 398,000 were Accras this year, against 466,000 in 1919. Here are details:—

Cocoa Arrivals into New York.

Jan.-May	1920 Bags	1919 Bags	1918 Bags
All growths	1,081,900	978,716	1,166,411
Including—			
African	488,666	397,747	256,175
Trinidads	83,624	26,894	151,055
Bahia	161,950	226,892	262,214
Sanchez	102,478	80,811	114,391
Venezuelan	71,018	26,077	103,805
Guayaquil	118,904	177,234	184,439
Haiti	13,387	22,169	12,133
Grenadas	8,176	5,845	37,116

Havre's Stock, July 31st.

	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará	4,085	216 to 225	3,188	168 to 180
Bahia	53,571	195 ,, 220	46,435	165 ,, 185
Venezuela	26,018	240 ,, 375	11,566	191 ,, 235
Trinidads	57,169	220 ,, 230	28,366	188 ,, 192
Grenada & O.W.I.	10	175 ,, 220	3,400	170 ,, 185
San Thomé	89,633	175 ,, 220	4	170 ,, 180
San Domingo	27,879	180 ,, 200	4,291	156 ,, 165
Haiti	31,406	170 ,, 200	15,169	138 ,, 157
Accra	34,864	175 ,, 185	120,406	140 ,, 150
Guayaquils	6,474	280 ,, 300	102,532	174 ,, 180
Others	27,494	—	2,678	—
Totals	358,603 bags		338,035 bags	

In comparing Havre's rates with 1919 or those ruling before the war, allowance must be made for the continued adverse exchange against that country at the present time.

To show what growths and what quantities of each have been coming to Europe during the seven months January-July, both this year and in 1919, as compared with the five months for New York already given, I am including the following couple of tables this month :—

Havre Movements, January—July	Landed 1920 Bags	Landed 1919 Bags	Del'd H.C. & Export 1920 Bags	Del'd H.C. & Export 1919 Bags
Para	8,038	13,328	13,677	10,258
Bahia	79,153	80,725	46,668	37,225
Venezuela	39,265	12,975	31,455	5,730
Trinidad	81,271	51,011	46,427	23,235
Grenada & O.W.I.	751	7,369	4,765	3,987
San Thomé	132,242	—	62 285	456
San Domingo	30,492	4,206	3,366	260
Haiti	37,648	17,990	17,792	2,899
Accra	65,494	134,920	80,256	14,524
Guayaquil	13,794	140,882	76,862	10,142
Divers	38,899	3,560	14,591	943
Total	527,047	466,966	398,144	109,659

London Movements—	Landed 1920 Bags	Landed 1919 Bags	Del'd H.C. & Export 1920 Bags	Del'd H.C. & Export 1919 Bags
Trinidads	52,779	43,643	30,065	29,259
Grenadas	31,485	24,519	21,424	15,996
Other W.I.	23,956	12,577	9,060	9,974
British African	112,191	79,666	76,929	48,463
Portuguese African	802	3,573	22,128	20,842
Cameroons	—	2,645	1,110	871
Ceylon and Java	24,190	15,076	8,639	15,573
Guayaquils	93,498	67,399	19,654	67,092
Bahia and Brazil	479	—	2,694	393
Other foreign	41,203	4,634	10,051	3,263
Totals	380,583	253,732	201,754	211,726

America seems to find that supplies of Guayaquils and Trinidads are not likely to be so liberal as they would wish. Havre certainly has a very small stock of the first, but just double the quantity of Trinidads to what she had last year. London has a good supply of Trinidads, and, for her, a very big stock of Guayaquils.

New York received 22,517 bags of San Thomé during January-July, Havre 132,242 in seven months, whilst London only had 800, of which 750 bags arrived in one week (ending January 24th). Lisbon to the end of June (July's figures have yet to come) received 209,173 bags, of which no less than 153,603 arrived in January. Some of these arrivals may have had "cross-country" runs, i.e., not come direct from San Thomé and so appear twice, but on the whole the above gives some little idea (which it is impossible to get otherwise) what San Thomé has been doing with its cocoa this year. We still have to learn the total output. Perhaps with Professor Urich over there we may get some definite news in the days to come.

London has got over the 300,000 bag line with her stock as under. What Liverpool has I dare not say. She received, we are told, 950,578 bags during January to July, and delivered 138,831; the rest you can work out yourselves.

London Stock, August 14th.	1920 Bags	1919 Bags	1918 Bags	1913 Pre-war
Trinidads	52,085	41,529	9,073	11,885
Grenadas	27,729	17,220	13,745	5,694
Other W.I.	20,671	6,811	3,311	4,433
British African	51,148	43,305	32,535	12,251
Portuguese African	3,048	6,499	2,824	4,067
Cameroons	1,378	3,093	3,117	2,778
Ceylon and Java	23,101	7,821	15,528	16,827
Guayaquil	81,658	15,834	20,139	13,618
Bahia and Brazil	217	986	3,337	374
Other foreign	43,470	10,045	7,070	9,509
Totals	304,505	153,143	110,679	81,436

Coming now to the question of future prospects and present prices, planters, of course, must take much more interest in European politics than they would dream of doing for love of the countries themselves. Even America is not altogether a mill-pond, although we are assured that things will go more smoothly there now that the chief candidates for the coming Presidential election have been decided on, but it remains to be seen what will actually happen. On this side also the, apparently incorrigible, upheavals—like mud-volcanoes—all over Europe, here with the surface barely agitated, and there a perfect "gusher" of mud spending itself to the benefit of no one and the detriment of us all, must apparently be expected and tolerated for some time, and the demand for raw cocoa is as much affected by this as any raw material.

This is due to the inability of sugar to be grown to anything like pre-war scale (nearly 19,000,000 tons in 1914-15, including British India, so that to-day, allowing for increased wages and spending capacity everywhere, but especially in America and Europe, we ought to have 25,000,000 tons, and not only 15,000,000 or but little more) until things settle down, and you can more easily make tyres without a cotton-fabric foundation than you can make chocolate or induce the public to drink powder without sugar.

Producing centres meanwhile seem putting their houses in order. We know that the dread of a pest-plague beyond reasonable control has caused the authorities on the Gold Coast to take steps to check the careless planters and to see that the trouble where rampart is not only kept at bay, but is mercilessly driven back. Then, as already stated, Mr. Rorer is in Ecuador attending to the trouble there, whilst Professor Urich, home on leave, has gone to San Thomé (a true busman's holiday) to investigate and report on the trouble among the trees in that island.

By the time, therefore, that Europe (leaving out America with its coming election and then the boom when the successful candidate assumes office) is ready for her normal cocoa supply (which when it does arrive will be found to have increased to an amazing extent, when everyone is ready to be fed, compared with the 1913-14 demand), all the chief producing centres, not forgetting San Domingo, will be in a better condition than ever before to cope with that demand. The only item about which any doubt still exists is as to whether Europe will be ready with sufficient sugar to sweeten her meals. The general settlement and consequent demand for cocoa can and will come simultaneously, but adequate supplies of sugar to go with the cocoa must take a little longer. It may be, therefore, that for another year the full demand will be held back until the output of sugar in Europe has been able to catch up with the demand for it to make into chocolate or to sweeten powder.

All this, the planter will tell you, is in the sweet by-and-bye, doubly sweet it will be when the sugar is there; at the moment, however, there is no such sweet dream to indulge in, but hard, disagreeable facts to be faced. Until regular sales take place and are reported, no reliance can be placed on the present valuations, which, based on 68s. to 72s. for fine fermented Accras, run about the following. I give them merely as some guide, and without any guarantee as to their accuracy.

Trinidads.—Fine to superior marks are reported to have sold in small lots, a few bags only at 107s. and 105s. What a thousand bags, much less 10,000 bags, would sell at no one can say. Good middling must be put at 100s. on the above basis, I suppose, and mid. red at about 95s. or 96s., but most people now are valuing the best marks at 100s. only.

Grenadas are valued on paper at 95s. for the best. There are optimists, I believe, still who claim that this is too low, but that cannot be with Trinidads around 100s. for the best. Comparatively speaking, therefore, good to fine Grenadas, St. Lucia and other W.I. must stand at 90s. to 95s., and fair to good fair 85s. to 90s.

Guayaquils are put at 120s. to 135s. for the best Arriba, and around 100s. for Machala and Caraquez. These rates are, however, entirely nominal, and prices in New York, which continue to be published regularly in the *International Confectioner*, by Messrs. W. R. Grace and Co., and elsewhere must be taken note of most carefully.

Accras are a puzzle. New crop for December-February delivery seem to be worth around 70s. to 72s. for fine fermented, but offerings now, partly because demand generally is slack, and also because so many buyers are unloading excess of stocks, are quoted low. The quality of these offerings, however, must be taken into account, and so it may be that, if first-class Accra were available to-day, it would still command as good a price as it will secure after Christmas. Sales made range from 55s. to 67s.; what actual quality or grade changed hands at the top price is not to easy to say. There is reason, however, to believe those who claim that Accras worth 65s., and especially 68s. or more, are wanted, whilst those at 55s. or less are becoming a menace.

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Next Year's (1921) Exhibition and Congress.

REGARDING the cacao section of the above Congress, it has been suggested in the leading trade paper (*Confectionery Journal*) that at least one paper should be devoted to details showing the relative importance of the United States compared with the U.K. as a buyer of chocolate and confectionery. "I do not mean taking the United States as a whole," explains the writer in the pages of our contemporary, "but according to the district, to the street, or the individual shop even, as compared with the retail trade over here. Can the shops in the States, for instance, sell more than we do per thousand of the population? Are there more or less shops selling chocolates and sweets in America (to the thousand of population)? Such questions are worth being discussed and answered."

We agree with such a proposition, and one leading paper on the subject at the Congress would go a long way to help planters to ascertain what the present demand is in America as compared with here, and where it can be improved so as to require more raw cocoa, especially of the better kinds. The manufacturing and distributing trade also could learn much, and see where they are ahead and where behind their competitors. At present the raw cacao market is very sick; by next June, however, it should be in such a state as to greatly benefit by the discussion proposed. It is no use growing and fermenting more cacao for market if the market has got choked up and cannot pass on the raw material. Such a paper should help to clear the lines as well, perhaps, as enabling the market to carry still more.

Meanwhile we are pleased to hear that technical rubber classes are being arranged for in north London, where the Governors of the Northern Polytechnic Institute, Holloway, London, N., are on September 27th opening a School of Rubber Technology. There will be day and evening courses, designed mainly to train those who have already acquired a thorough knowledge of chemistry and physics and are now desirous of taking up responsible positions of a scientific and technical nature in rubber factories.

The School will be in close contact with the Industry, as it will be under an Advisory Committee composed of representatives of the manufacturers, producers, merchants, rubber engineers, &c., and supporters of the coming Rubber Congress and Exhibition will be interested to hear the Director of the courses is Dr. Philip Schidrowitz, one of the Vice-Chairmen of the Congress, who has a world-wide reputation as one of the leading authorities on rubber. A more suitable choice, and one productive of greater ultimate benefit to all concerned, including the purchasing public, could not have been made.

Why do the English keep aloof of San Domingo?

A CORRESPONDENT in San Domingo writes us from San Juan, Porto Rico, saying that he had just seen Mr. Felix Camps (whose name appeared in our issue for July, p. 110), who had likewise come to the island for a change. It seems that Mr. Camps has left the Government service in San Domingo, where he is considered to have left things, so far as cacao is concerned, considerably better than he found them, though nothing so far has been done to make that island anything but a closed book to the English cacao market. One wonders why, especially as there are wondrously good prospects over there for any English house who desires to go in and do an extensive business, as has been done in Bahia and on the Gold Coast.

From what we know of the island, the only difficulty that the would-be starter is inclined to come up against would be lack of knowledge of how to proceed, and who to buy from. If Mr. Camps has left the Government service, we rather hope he will be able and willing to help in this direction, for he has been travelling up and down the producing areas over there for some three years or so by now, and could therefore give reliable information on the many points requiring to be smoothed out.

Friends in the island report that the San Dominicans prefer doing business with the English, and if this is so, again one wonders why we do so little with the island, especially in connection with cocoa. There is, we believe, quite a good opening for the manufactured article, especially chocolate, out there, but whether as buyers or sellers, to do business the firm must have a local agent who knows the country, and also the people and their tastes and can speak the language fluently. One of our Mincing Lane friends was over there not so very long ago, and stayed with friends at several centres, and on his return spoke with considerable enthusiam of the people, of the hospitality and the way it was offered, naturally, quietly and free from any fussiness or ostentation. Of the prospects of trade he was quite emphatic, both as to the volume which it would assume, and as to the absolute neglect of the possibilities on the part of this country. Messrs. Grace and Co., the well-known international firm, were looming more and more prominently in the horizon as buyers of cocoa, and also of hides (San Domingo, the old Hispaniola of Mansfeld and Harry Morgan's days, was the home of those herds of wild cattle whose meat was dried by the *boucaniers*, a name since corrupted into buccaneers), but, so it is believed, they will not establish an agency until they have arranged to run their steamers regularly between the island and New York.

It seems impossible to secure reliable figures of what cacao is being produced and what has been shipped. When Mr. Camps has finished his vacation, we can only hope he will be able to answer our queries on this point and also concerning the method of fermenting the beans over there. As we said in July, a paper sent over for the Cacao Section of the Congress next June, would help both sellers in San Domingo and buyers elsewhere.

Reviews.

COCOA AND CHOCOLATE: THEIR HISTORY FROM PLANTATION TO CONSUMER. By A. W. Knapp, F.I.C., B.Sc.(London and Birmingham), &c., Research Chemist to Messrs. Cadbury Bros., Ltd. Pp. 210. 98 illustrations. 22 oz. Price 12s. 6d. net. Chapman and Hall, Ltd., or TROPICAL LIFE Publishing Department.

We are glad to see this book; without competing or running parallel with such technical planters' manuals as the works of Van Hall, Hinchley Hart, Oliviere, or Herbert Wright, it will still find its way into every cacao-man's bookshelf, and prove very useful when there. Among its many uses it should go a good way to help popularize the knowledge and use of cocoa as a food or beverage. We like it throughout, and not least because of the bibliography (covering the years 1600 to 1920) at the end and the concluding paragraph of the Preface at the start, which tells us: "The industry with which this book deals is changing slowly from an art to a science. It is in a transition period (it is one of the humours of any live industry that it is always in a transition period). There are many indications of scientific progress in cacao cultivation; and now that, in addition to the experimental and research departments attached to the principal firms, a Research Assocation has been formed for the cocoa and chocolate industry, the increased amount of diffused scientific knowledge of cocoa and chocolate manufacture should give rise to interesting developments."

This is the first we have heard of an inter-trade Research Association. Certainly such an arrangement was wanted, but we do not always get what we want or even what we need, so feel all the more pleased when we do. Such research organizations are typical of the times. England is waking up; instead of being content to blunder through, such a scheme shows that we mean to win by scientific skill as well as by mere weight in the shape of merit, which often makes the goods cost more than the showy and much advertised goods of our competitors. Mr. Knapp, it will be remembered, was "Our Friend" last December, whilst Dr. Porritt, Director of the Research Association in connection with rubber tyres, was good enough to figure in the gallery in June. Sugar, cacao and rubber, therefore, each have their research associations, and if that does not pump some life into the demand for the raw material of cacao and rubber, it will be very surprising.

The book starts with Mr. Knapp's views on that evergreen trouble of the spelling, with which views we fully agree. Incidentally, this leads to a most interesting derivation of the name coconut, one we have never heard before. If cacao, cocoa or coconut had always been spelt properly, he tells us, no one would have dreamed of confusing cacao and coconut. You note that I spell the last word "coconut," not "cocoanut," for the name is derived from the Spanish *coco* = grinning face, given to the nut because of the three scars at the broad end which resemble a grotesque face. Further on (p. 7) another derivative is given, when we are told: "It is curious that Montezuma took no other beverage than chocolate, especially if it be true that the Aztecs also invented that

fascinating drink, the cocktail (xoc-tl). The derivation of the word chocolate is also discussed (p. 10), where we are reminded that it comes from the Mexican *chocolatl*. The first part of the word, it has been suggested, is from the *choco, choco, choco*, as representing the sound made when stirring the beverage (swizzling it up into a froth), the last syllable *atl* being the Aztec for water.

Later on we hope to find room to discuss what Mr. Knapp has to say on fermenting, drying, the progress of the industry on the Gold Coast, &c. We dare not start doing so now, for if we did we are not sure when we should leave off. It is about two months since we first, in our letters or in the columns of Tropical Life, reported the fact that this book was in course of preparation. The best "review" that the completed work can possibly receive lies in the number of orders for copies that we received from all sorts and conditions of men, without waiting to see the book or ask the price. The name of the author was enough to cause the orders to be sent along. When the goods are delivered they are certain to give satisfaction.

Two Interesting Dutch Colonial Books.*

"Wood Carving and Metal Work in the Dutch Indies" is the title of the eighth report of the art industries of the Indies, issued by the Colonial Institute, Amsterdam. Written by J. A. Loeber, Jr., its price is 1.25 florins. This work is the last of a series of eight such reports dealing with weaving, bamboo work, ornamental leaf-work, ornamental textile work, leather, &c., work, carved bones, horn and tortoiseshell work, and finally the subject of the present issue—wood carving and metal working, closing with a bibliography of the literature on Indian art industries. The book is nicely illustrated with many photographs of the work done, and reveals a genius of artistic conception and delicacy and boldness of design and outline that reminds one of Japan, and must surprise those unacquainted with the "degrees" of darkness that exist throughout the great tropical archipelago: albeit some of the soul or spirit representatives from the South Western islands show that wood carving there is in the hands of very incult people.

"Bone, Horn and Tortoiseshell Carving in the Dutch Indies," also by J. A. Loeber, price 1.25 florins, is the seventh report on Dutch Indies' art industry, issued by the Colonial Institute, Amsterdam. The account is a most interesting one, and the illustrations show that much skill and patience have been applied to the production of the articles described, though they disclose an obvious crudeness of finish.

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* As a rule we have to pass our Netherland's literature by, as we cannot master the language in these days of pressure to feel sufficiently sure and safe to discuss them, although we know enough to fully realize the value of their contents. This time, however, Mr. W. Jacob, who knows most of the European languages, including Russian, has come to our assistance, and sends us the following note which we publish with pleasure.

Rubber Notes.

Money is Tight in the Straits Settlements.

H.M. Trade Commissioner in the Straits Settlements reports to the Department of Overseas Trade that there is considerable tightness of money at present in the bazaars of that territory. This tightness has been caused in the first instance by the heavy fall in the prices of tin, rubber and local products generally, and in addition there has undoubtedly been a considerable amount of speculation amongst the native dealers in imported articles, such as piece-goods, and such speculation has resulted in those dealers being left with heavy stocks when the demand suddenly ceased. The Chinese banks, which were making advances freely on the rising market, have also increased the tightness by calling in advances to the extent of 40 per cent.

But Not so Tight in Singapore.

So far as Singapore is concerned, there has not yet been any serious trouble. The old-established British firms are getting their bills paid at the due date, but there is undoubtedly a tendency on the part of dealers to press for an extension of credit in quarters where they imagine it may be obtained. For example, it is believed that the German-Swiss firms have allowed extensions of from sixty to ninety days and are not being paid even then. It has also been found necessary in many cases to extend deliveries of goods previously ordered until the congestion in the bazaar has been cleared to a certain extent, in view of the fact that the dealers could not possibly dispose of them at the present time.

In the Malay States conditions appear to be much the same as in Singapore. With regard to Penang, serious rumours of trouble have been afloat, but the Commissioner during his recent visit there found that these rumours were to a great extent unfounded, there having been six or seven small failures only among the native dealers, together with the usual attempts to obtain extensions of credit, but the leading merchants none the less appeared to think that the situation was well in hand.

Penang is Prosperous.

In contradiction of the above-mentioned rumours, the Commissioner reports that he found in Penang a great air of prosperity in spite of the recent fall in the prices obtainable for local produce, and the condition of the bazaar was obviously not so bad as had been reported. Old office premises are being pulled down and large, new and up-to-date buildings are being erected everywhere in the business quarter. There is the usual shortage of hotel and housing accommodation, but this is being remedied as rapidly as possible, and on the whole the cost of living, although high, is not nearly so extortionate as in Singapore.

Summing up, it seems that:—

Generally speaking, with regard to conditions in the Peninsula as a whole the position would appear to be that if the fall in prices continues and anything like

a collapse occurs in the distributing markets, the old-established British mercantile houses would be well able to weather the storm, but possibly the newly established firms with small capital would experience a very anxious time. It is undoubtedly a time when manufacturers in the United Kingdom should exercise the greatest caution in opening up direct relations with bazaar firms; more particularly is this the case where, as in a great number of cases, firms are reputed to be supported by some wealthy native, as in these cases it would be too often found that this support has been withdrawn when there is any prospect of trouble. Similar occurrences were rife during the crisis in 1908, and it seems probable that it would occur again if there be any further serious fall in prices.

JAPAN AND AMERICA MAY GIVE THE MOST TROUBLE.

Personally we believe that the weakest link in the plantation rubber industry at the moment is the tendency to expect more support from Japan and America than those two centres are likely to give. The *India-Rubber Journal* has already called attention to the chances of a crisis if not a panic among some firms in America, and reports generally from that market are bound to make any large producer quite uncertain as to what support he can look for for some time to come. When a strong concern shows signs of "cracks," it is more disturbing than if a small concern or centre shows signs of drying up. With Japan, labour and finance are both a bit restless, and the rapid growth and wonderful increase of the rubber industry there will cause the absence of their support to be felt more now than in 1918 or before that.

With the European (continental) demand things are so bad that no one can be misled by them. They must surely, on the whole, therefore, show more improvement once a start is made, than can be looked for from America, from Japan or ourselves. With us the trouble is to get any reliable continuance of work. Retail buyers everywhere are complaining of the high prices asked, but far more so of their inability to buy rubber goods at any price. "Surely it is an incongruity that the R.G.A. should be offering £5,000 in prizes for a suggestion for new uses of rubber, when one of the main uses of rubber—to keep the feet dry—is in such a deficient stage." Thus wrote Mr. J. S. M. Rennie in the *I.R.J.* of September 4th, after vainly endeavourig to buy English-made rubber boots for his family. It is the same with all rubber goods. It is not only incongruous, therefore, to offer rewards for suggestions for new uses of raw rubber, it is a downright waste of money so long as Labour in the U.K. is doing everything to check industry and production. The rubber manufacturer is, of course, dependent on a score, perhaps on fifty industries if he is to go "full speed" ahead; therefore the fault may not (and does not, so far as we know) lie at the door of the workers in the rubber industry; it is the fault of Labour as a body, both directly and indirectly, that is causing the sales of rubber goods to be so restricted in this country, the demand for raw rubber to be so small, and the price of the raw material so unreasonably and unnecessarily low. In spite of its present price the public get no benefit whatever, as they never paid such unreasonable prices for the manufactured goods, whilst serious harm is being inflicted to all but a few estates.

WHY NOT PLANT COTTON?

One of the shrewdest rubber men down Mincing Lane "blew in" the other day to discuss some notes in the *Rubber Age* on the advisability of rubber men (in this case in Brazil, where the low price of rubber and the altogether unparalleled price of foodstuffs in the rubber-estrada areas has placed the industry in a very bad way) turning their attention to cotton production, which pays amazingly when you are sure of your market (say tyre makers exclusively), when you produce just the cotton they want, and when, furthermore, being cute and also interested in the work (and what work can be more interesting than cotton-crossing and the breeding of new kinds?) you hybridize what you have, and obtain new strains from Peru, from Pernambuco, from Egypt, from Arizona, from India, from Australia, to improve what you have. In fact to succeed you must run a regular Cotton Zoo in your experimental grounds, and do not put all your eggs in one basket. By this is meant do not only plant in Brazil, but take shares in Egyptian, Indian and other concerns too; above all, start right now to train boys and men, scientifically and practically, to become cotton experts right through.

THE SHORTAGE OF COTTON EXPERTS.

The world is short of cotton-growing experts. Are there any at all; if so, where are they, and what are their names? If they are to be found, grab them and hold them, paying them any price they want to train others. We cannot have too many of really first-class men. There is far more to learn in the properties and constitution of a strand of raw cotton than the world imagines. There is more money paid by the rubber tyre makers and others for particular grades of cotton than most cotton men know of unless they produce it themselves. Tyre fabric cotton is somewhere, at present, in the region of 9s. per lb. (nine shillings, we also spell it to drive the lesson home), being paid, we are told, for the favourite Egyptian grade. Think it out, therefore, as there is money in cotton planting, when you grow the right kind. Why not put, as my visitor suggested, 50 per cent. of your available capital in rubber and 50 per cent. in producing good grades of raw cotton for tyre-fabric, produced by a real expert, paid by results and not as an official, whether he pleases you or not? Do something of the sort, and then you will find your income much steadier and moving on the upward grade, far more so than if you stick only to rubber.

A LAST WORD.

Never be satisfied with what you produce, no matter if you got 90s. lb. Always go on planting, crossing and experimenting to get something better, i.e., more suitable for your buyers. That is the fascination of cotton-growing. The monotony of it lies in growing the same everlasting kind, no better and no worse than your neighbour's stuff that can be bought by the shipload. That is not scientific cotton-growing, so try and avoid such a rut. Start with "fine" at so much

per lb., and go on improving until it is so choice, so strong, so long and so "kinky" in the strand, that the tyre man and others will buy it by the ounce.

But we must stop, for although we do not write on cotton-planting as a rule, it has always had a great fascination for us.

P.S.—Do not start planting anywhere until you are sure that the necessary labour to pick will be there when wanted.

Straits Settlements Rubber Exports.

An official cablegram from Singapore states that the export of rubber from the Straits Settlements ports in the month of July amounted to 10,773 tons (transhipments, 2,355 tons), as compared with 11,663 tons in June and 7,818 tons in the corresponding month last year. The total export to the end of July was 90,208 tons, as against 90,545 tons in 1919 and 44,158 tons in 1918 for the corresponding period. Appended are the comparative statistics:—

	1918 Tons	1919 Tons	1920 Tons
January ...	4,302	14,404	13,125
February ...	2,334	15,661	17,379
March ...	8,858	20,908	5,931
April ...	6,584	10,848	15,720
May ...	13,587	15,845	15,617
June ...	6,515	5,059	11,663
July ...	1,978	7,818	10,773
Total ...	44,158	90,543	90,208

Rubber Prices and News.

According to Messrs. Lloyd, Matheson and Carritt, the price of rubber shows quite a serious decline and fully justifies all the remarks on the causes of this stagnation that we made last month. There can be no denying the fact that rubber goods, tyres, &c., are wanted—at a price, and that the present retail cost of the manufactured article is far too high, especially with petrol at 4s. 6d. a gallon, if not more—another blow to rubber. Whose the fault is, whether makers or labour, probably both, is no concern of ours. All we know is that the price of raw rubber has no more reason to be as low as it is in face of the demand for rubber goods, than the price of these goods need be so abominably high—well above the popular purse.

Messrs. Lloyd, Matheson and Co.'s Report.

The market on September 9th found f.a.q. smoked sheet at 1s. 6¾d., against 1s. 7d. on September 2nd and 2s. 2¾d. on September 11th, 1920, whilst Crèpe was 1s. 8d., 1s. 8½d. and 2s. 3¾d. on those dates, against 1s. 8¼d., 1s. 9d. and 2s. 6d. for Hard Fine Para.

This week, September 16th, a further rubber fall has to be chronicled, both spot and forward. However, unlike cocoa, which seems unable to move at any price, considerable quantities of rubber seem to have changed hands at the rates quoted below, especially sheet and Crèpe. These transactions, however, leave the market weaker and prospects are not cheery, especially as the "stew" in America continues.

The latest (L. M. and C.) quotations include:—

Spot quotations—	1920 Sept. 16th.	1920 9th.	1919 18th.
	s. d.	s. d.	s. d.
Smoked sheet (F.A.Q.) ...	1 5½	1 6¾	2 3¼
Crêpe (standard quality) ...	1 7	1 8	2 3¾
Parà	1 7¾	1 8¼	2 6¼

Forward positions—	Smoked Sheet	Crepe
	s. d.	s. d.
1920, September	1 5½	1 7
,, October—December ...	1 5¾	1 7½
1921, January—March	1 7½	1 9
,, January—June	1 8¼	1 9¾

Stocks—		Tons		Tons
Plantation, London	.. Sept. 11th, 1920,	33,220	... Aug. 1st, 1919,	28,000
Parà, Liverpool	... ,, 1st, ,,	500	... ,, ,,	1,100
	Total	33,720	Total	29,100

Vegetable Oil Notes.

Did We Dream It?

Going over our papers—which are not always as orderly as they should be—we came across a letter from one of the world's leading men in the vegetable oil. It carries no date, but the incident happened some years ago—one wonders whether such things will ever happen again? "I hope," our correspondent wrote, "that it will not be a shock when I tell you that recently when we were endeavouring to obtain permission from the Colonial Office to develop the palm oil industry, one of the high officials whom I interviewed, after he had been knighted for his services in connection with his office, surprised me over his lack of knowledge. It was at the time when Messrs. Lever Bros. had been granted facilities for coconut planting in the Solomon Islands, and I called to lay our case before him regarding the development of oil-palms in British West Africa, when I was met at once with the statement, "Why British West Africa; why not go, like Messrs. Levers, to the Solomon Islands, or elsewhere in the Pacific for the palm trees; what do you want palm trees for in British West Africa?" When I said palm oils, the official answered, "For palm oils, but cannot you get them from the palm trees in the Pacific?" He seemed perfectly ignorant of the fact that the coconut-palm in the Pacific and the oil-palm in West Africa were not one and the same. I expect such a man never reads Tropical Life, and never will. Why should he? The best information placed at his disposal would still leave him where he is, and why not? He was very happy. He had got a good position with a retiring pension at the end of his term, so why should he worry?"

It is a pity that this interesting document carries no date.

Lord Milner *v.* Mr. Joseph Chamberlain.

One wonders how the attitude of the present Secretary of State compares in the minds of our big trade developers, like Mr. J. H. Batty, or Lord Leverhulme, when the question of vegetable oils comes up for discussion. Lord Milner has been claimed by Mr. Wilson-Fox as being on his side, when the development of the palm industries is on the *tapis*. If this was so, one wonders if the claim still holds good. We

believe it no breach of confidence to say that not so very long ago Lord Leverhulme seemed disappointed with the present policy of the Colonial Office. "The only Colonial Minister we have had, in my experience," he wrote, "who was really interested in the commercial side of tropical development, has been Mr. Joseph Chamberlain. It was he who saw the advantages of properly developing the Solomon Islands. Since then, I have not met with any Colonial Secretary who has really appeared even to make a pretence at grasping the possibility of tropical developments, or extend any encouragement in connection therewith."

NATIVE LABOUR AND ITS POWER OF ENDURANCE.

We are not altogether of this opinion, but know Lord Leverhulme as a very capable man for getting things done without overdoing them during a short spell, and then having to go slack, through the labour necessary being killed out, worn out, or else frightened away. It was to call attention to the over-optimism of the hustling policy (so far as native labour in the Tropics is concerned, in marked contrast with the strikes and slacking off over here), that we issued our book on the subject ("How to Pay for the War") warning the public of the menace to tropical enterprise if too much was expected of the natives in the Tropics. We have reason to believe that the book has been widely read by men who count in these matters.

Sir Frederick Lugard told us he was ordering a copy. But judging by the excellent article he has contributed to the *Nineteenth Century* for August, on "The Crown Colonies and the War Debt," if Sir Frederick has not yet read our book he has no need to, because his ideas coincide with our own, only he has put his with more emphasis and authority than we could have done. Lord Leverhulme, it may be remembered, contributed a Foreword to the second reprint (yet to appear, because of the exorbitant cost of paper in these days), in which, as we pointed out in July, 1919, he said: "The whole human family, the world over, of all races and colour, looks to the U.K. and its people for help and guidance in development and progress; and we are deeply indebted to the author for this book, which indicates so clearly the many directions in which our help and assistance can best be given."

SIR FREDERICK LUGARD ON AFRICA AND VEGETABLE OILS.

Having studied what the ex-Governor-General from the chief vegetable oil centres of Africa has to tell us, one wonders what he would say, as compared with Lord Leverhulme, on our views. Judging from his article, he agrees with us that the members of the Empire Resources Development Committee could not have, and indeed did not realize what they were asking the natives forces of the world to do for them as newcomers, *on the top of all they were already doing for the old and well-established firms.* "No one would for a moment believe that Mr. Fox—*malgré lui*—could subscribe to the policy needed to do what they ask." Thus argues Sir Frederick Lugard, who also reminds us that "the scheme as outlined by Mr. Wilson-Fox at the Colonial Institute has not been withdrawn and apparently holds the field." Tropical Africa must always be the backbone of the supply of raw material for the soap and margarine industries of the whole world, no matter to what dimensions coconut and other oils can fill out the muscles and flesh and add to the bone-growth of the rest of the body. And since, as with human things, there can be no health or even life worth living with a damaged backbone, anything that harms the seed and vegetable oil trade and industries of Tropical Africa, must harm the manufacturing industries of this country and everywhere else using those oils. Besides example spreads, and if a mistaken policy damages the African vegetable oil industry it will not be long probably before the same policy blights the magnificent trade of India and the South Seas also. On this account we would not only recommend, but would urge all vegetable-oil men, producers and users, to closely study what Sir Frederick Lugard has just written in the August issue of the *Nineteenth Century* and then compare it with all that we claimed regarding the dangers of over-optimism, when we published our book two years ago.

PRICES OF COPRA AND COCONUT OIL.

Since the last report the price of copra has ruled considerably higher, closing firm on September 17th, when these notes were written, at £56 15s. spot up to £57 15s. December-February delivery for F.M.S. Other prices ran as under. This time Rotterdam and Hamburg are included:—

COPRA PER TON.

September spot:—	London		Marseilles	Hamburg and Rotterdam.
	F.M.S.	Ceylon	F.M.	F.M.S.
	£ s.	£ s.	£ s.	£ s.
Sept. 18 ...	57 10 to 58 5	... 58 10	... 55 10	... 57 15
,, 17 ...	57 5 ,, 58 5	... 58 10	... 55 10	... 57 15
,, 16 ...	56 10 ,, 57 5	... 57 10	.. 55 5	... 57 10
,, 14 ...	56 0 ,, 57 0	... 57 5	... 55 10	... 57 10
,, 13 ...	56 0 ,, 57 0	... 57 10	... 56 0	... 57 10
,, 10 ...	57 5 ,, 57 10	... 57 15	... 56 0	... 57 10

At times, especially during last week, ending September 11th, the fluctuations were considerable, and it looked as though £60 would be touched for Ceylon. I am, however, unable to say the highest point reached either during that week or up to now. No quotation for Cochin or Malabar.

COCONUT OIL PER TON.

	Ceylon			Cochin	
	Spot	For shipment		Spot	For shipment
	£	£ s.	£ s.	£	£
Sept. 18 ...	95	... 93 0		... 105	... 96
,, 17 ...	96	... 92 10		... 110	... 95
,, 16 ...	96	... 91 0	to 91 10	... 110	... 95
,, 14 ...	96	... 91 0	,, 91 10	... 110	... 95
,, 13 ...	96	... 91 10		... 110	... 95
,, 10 ...	96	... 91 10		... 110	... 95

OTHER OILS PER TON.

	Castor Firsts	Ground-nut Crude	Palm kernel Crude Hull spot	Cotton seed Crude Egypt
	£	£	£	£
Sept. 18 ...	75	... 83	... 80	... 73
,, 17 ...	75	... 83	... 80	... 73
,, 16 ...	73	... 83	... 80	... 73
,, 14 ...	73	... 83	... 80	... 73
,, 13 ...	73	... 83	... 80	... 71
,, 10 ...	73	... 83	... 80	... 71

The Rice Crop of British Guiana.

A Lesson for India and her Sugar Industry.

Whilst Ceylon and elsewhere are growing impatient at the small supplies of rice that come their way, and also at the cost of what they do receive, it is interesting to note the following output of rice, and area producing it, in British Guiana. We beg to offer our congratulations, therefore, on the results both to the producers and also to Professor J. B. Harrison and the staff of the Government Agricultural Department for their share in the success we now have to record.

Acres Reaped and Annual Exports and Imports of Rice in British Guiana.

Years	Average acres reaped (approx.).	Rice exported per annum in lb.	Rice imported per annum in lb.
1884-1888 ...	2,500 ...	*nil* ...	45,500,000
1889-1893 ...	2,500 ...	,, ...	41,964,000
1894-1898 ...	7,490 ...	10,820 ...	32,062,000
1896 ...	6,500 ...	*nil* ...	32,913,000
1899-1903 ...	15,020 ...	6,000 ...	18,127,000
1904-1908 ...	29,500 ...	3,769,000 ...	5,644,000
1909-1213 ...	37,750 ...	10,177,000 ...	365,000
1914-1916 ...	50,570 ...	21,769,000 ...	20,100
1917 ...	63,980 ...	32,182,000 ...	5,950
1918 ...	59,500 ...	17,958,000* ...	161,790
1919 ...	73,104 ...	15,551,004* ...	*nil*

Here, therefore, is a striking example of what East Indians (from India), who are the mainstay (if not the ship's whole company) of this industry can do when encouraged and properly trained. Realize what a help it must have been last year for the world to draw 15½ million lb. of rice *from* British Guiana, and especially 32 million lb. in 1917, instead of British Guiana having to draw 45 million lb. from the world, as during any year from 1884-1888. One day, these same people in India will do with sugar what their relatives have done with rice in British Guiana. Instead of drawing 600,000 to 800,000 tons of sugar from outside they will, first of all, supply their own wants, and then as their output increases produce a surplus first of 50,000 tons and then of 500,000 tons and export that, receiving money for it, instead of paying out so heavily for what they now import instead of producing the sugar themselves.

Writing to the *Times of Malaya*, a correspondent states that certain cultivated varieties (of cotton) would do very well in Malaya, as has been proved experimentally, for a well-known planter in the Taiping district obtained a small quantity of Egyptian cotton-seed some six years ago and planted up about an acre to see how it would do. The seed took very kindly to the light sandy soil in which it was sown, and in a very little while there was a brave show of young plants. In about six or eight months these had grown to some five feet in height. With rubber keeping as low in comparison to cotton or sugar, one is not surprised and rather pleased to think of Malaya taking up another crop and so distributing her risks. In South Africa, we are told, cotton is also attracting attention even among the sugar planters, who are said to be making good profits out of its cultivation. This seems incredible when Jamaica is said to have refused £150 for her sugar in Kingston. What is the price in South Africa, especially in Zululand, where a number of sugar planters are said to be laying down cotton in *preference to* sugar cane?

* Export limited by Government control.

Does Cotton-growing Pay?

If so, why are not the Cotton Belts by now Covered with Crops?

More than once we have called attention to the apparently low prices offered to encourage native landowners to cultivate cotton, and seemed alone in our wonder that with prices at 2s. lb. or higher for middling American, better prices could not be offered in Africa and elsewhere for the ordinary grades.

All this time, however, we never had reason to speak out quite so plainly as a Texan cotton-raiser is reported to have done (see *Current Opinion* of New York for August, p. 255). If ever there was an industry and a place in which we imagined that the planters ran a danger of being snowed under with the profits from their crops, it was the cotton-growers anywhere in the United States, and yet this is what we read of the woes of a Texan cotton-planter:—

"The profiteers have cleared me up, and what is more, they will be on the job next year and the next and so on until we all become Reds. I am tired of making millionaires of two thousand popped-eyed parasites each year whilst reducing my family to pauperism." The mill, we are told, that took this victim's cotton at a price was able, because of profiteering, to increase its margin of profit from 2¾ cts. on every dollar of its sales in 1917 to 15½ cts. in 1917. We wonder how this compares with the coal-owners' or the cotton combines' profits over here?

If cotton-planters in the U.S.A. have to make such a statement, one wonders whether perchance there is a sugar-planter anywhere who also finds himself on the high road to the workhouse whilst the public is paying a shilling to eighteenpence for his sugar?

Who can tell? Why does not this Texan grouser try to grow improved strains, if his soil and climatic conditions permit? We hear promising tales from irrigated areas in Arizona, why not Texas?

Our Liberian friends will be glad to know the following, especially as the South American Cable Company have branch offices at Monrovia and receive messages to and from all parts of the world where cables are in existence.

Messrs. Elder, Dempster and Co., Ltd., are running a fortnightly service from Liverpool, and a monthly one from New York to Liberian ports, with frequent callings during the month of their homeward-bound steamers for cargo and passengers. Their express steamers only touch at Monrovia when special inducements offer or arrangements are made for their doing so. With these facilities, plus the assistance of that much-advertised $5,000,000 loan from America, Liberia ought to be waking up.

The Transatlantica Line of Spanish steamers which used to call monthly at Liberian ports have practically ceased doing so since the commencement of this year, and only an occasional steamer of that Line now calls, bringing but little cargo and taking away only small quantities of Liberian produce to Spain. The French Line of steamers have likewise ceased touching regularly at Monrovia or other Liberian ports.

Tropical Life "Friend."—No. 183.

MR. STANLEY MACHIN, J.P.

President of the London Chamber of Commerce, Chairman of the Imperial Council of Commerce, and Chairman of the Organizing Committee of the Congress of the Chambers of Commerce of the Empire, now sitting in Toronto.

WE are immensely interested in the Toronto Congress and have been so ever since we knew definitely some of the subjects down for discussion and the resolutions to be moved. By the time this issue is in the hands of our subscribers, we feel certain that all the resolutions mentioned in the (London) *Chamber of Commerce Journal* of August 13th (first page) will have been passed unanimously, and some of them even set in motion. Among them are: (1) Establishment of an Imperial Statistical Board and an Imperial Investigation Board; (2) Development of the Resources of the Empire, in which we trust that the lines laid down in our book on the subject ("How to Pay for the War—by Developing our Imperial Resources") will not be forgotten; (3) Empire Cotton Production; (4) British Trade with Venezuela, and a host more; but these specially interest us. One wonders rather that since the resources of the Empire, and cotton production within the Empire are down for discussion, the production of sugar within the Empire is not also down. Perhaps that will come in under the Resources of the Empire. We believe, in any case, a number of those present have studied our book on Sugar Production; we certainly hope so.

In face of this important Congress, what was more natural than that "Our Friend" for this month should be playing an important part at Toronto whilst this number was being printed and distributed in London. We therefore, after some persuasion, induced Mr. Stanley Machin, as Chairman of the Imperial Council of Commerce (on which Sir Edward Davson, "Our Friend" for last January also occupies a seat), and especially as Chairman of the Organizing Committee of the Congress, to join our Gallery of Friends.

If you want to study perpetual motion *in excelsis*, mental and physical, try and shadow Mr. Machin for a week. If you do, you would find "Our Friend" pursuing his way as fresh as when he started, whilst you—will let him do so, unable to stand the pace. And yet he never seems to seriously inconvenience himself, although you half run to keep up with his easy-going walk, whilst his mind and the subjects which he discusses exhaustively—not merely touches upon—must leave all but the keenest intellects entirely exhausted. But then think of what he has done since he came to London in 1879, and realize all he has crammed in the forty years since—and having done, still looks ten years, at least, younger than "we" do, with a less strenuous record. Evidently the pace does not kill, when the objects sought after are worth having.

Born in 1861, Mr. Machin in due course joined his father's firm, Messrs. Batger and Co. (established quite early in the eighteenth century), and now is not only at the head of that firm, but a director of Messrs. Crosse and Blackwell, Ltd., as well; a "judicious blend," which we, strong believers in amalgamations and working agreements, are quite sure will help push on the trading interests of this country when the world settles down and wants to be nourished and fed. Producers of most tropical crops (except rubber) but especially of cacao and sugar, must have sent their wares in one shape or the other for Mr. Machin's firm to make use of, and certainly no man in London has done more to encourage and organize the consumption of sweets and sugar in this country since he has been President of one or other of the leading trade associations, as the London Confectioners' Association, Manufacturing Confectioners' Alliance, and also the Food Manufacturers' Federation of the United Kingdom.

All the same we have always known "Our Friend" best in connection with the Chamber of Commerce, and it is this work which will cause Mr. Machin's name to go down to posterity—as it is certain to go, as one of the best known, most easily accessible, and with it all, the most naturally kindly men of all London's many magnates. Many notices have been written around Mr. Machin's name, and all sorts and conditions of men have written them, but all those whom we have "struck" are agreed on these points.

Like others, we have often wondered that "Our Friend" has never put up for Parliament; the "drive" in him, one feels, would prove exhilarating at times in that lotus-eating club (except for the heads), but so far he has held aloof. Yet his experience as Chairman of the London Labour Conciliation and Arbitration Board should make him a useful man in the House of Commons. As a past Chairman of the London Court of Arbitration, he should also be an expert in settling disputes both in the House as well as outside.

And all this time he is head of a firm which uses sugar as its raw material. Since the war has established the value of sugar and cocoa it is well to have "Our Friend" at the head of these industries.

Business Notices.

1.—The address of Tropical Life is Messrs. Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.

2.—All **literary communications** should be addressed **to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

3.—All **business communications and payments**, either for subscriptions or advertisements, should be sent **to the Publishers** of Tropical Life. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

4.—The Subscription, which is **Twenty Shillings** per annum, may commence at any time, and is payable in advance. Life Subscription, £10.

5.—The Advertisement Department is at 112, Fenchurch Street, E.C., where all inquiries respecting advertisements, charges, &c., should be addressed c/o the Manager of the Department. At the same time will advertisers kindly note that all copy and blocks for advertisements must be sent to 112, Fenchurch Street, E.C., before the thirteenth of each month, failing which, insertion of same in current month cannot be guaranteed.

6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Advertisers are only entitled to three changes of matter in the year of twelve issues, unless (1) they send electros for insertion, or (2) are willing to pay for the cost of setting up the advertisement. Owing to present high cost of composition and printing work we cannot depart from this rule.

8.—Changes of address should be promptly notified.

9.—Non-receipt of copies of the Journal should be notified to the Publishers.

10.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

September, 1920.

Agricultural College in the British Tropics, in Four Volumes.

The Close of the First Volume.

As stated at the tail of the sketch of "Our Friend" last month, the first portion of the history of the foundation of Agricultural Colleges in the West Indies and then in Ceylon has been concluded. Last month we spoke of it as the end of the first chapter; it would have been better described as the end of the first of four volumes. This means the decision arrived at to establish a college in the West, of the financial support arranged, and site chosen; a great deal in this volume to whet the appetite for more and to excite the attention of all believers in properly training the rising generation to win the Peace as we have won the War. The other three volumes will include as much being done for Ceylon (or elsewhere in the East, say, Singapore or Kuala Lumpur, as Ceylon seems to have lost interest in the matter), whilst the other two volumes will take us right up to the time when, first, the Western College will have been built, staffed and put to work; and then, and lastly, when the College out East is in the same happy state, or rather when the Empire will be in the happy state of having two such colleges.

The *West India Committee Circular* has published useful details of the progress of the scheme out their way, and in the issue of September 2nd is a well-written leader on the subject, under the title of "The West Indies Lead the Way." It is gratifying for us to know that the Director of Kew (Sir David Prain), who was Deputy Chairman of the Committee appointed to consider the desirability of establishing a college in the West Indies, as well as Sir Francis Watts and others, have always acknowledged the part that Tropical Life has played to bring the colleges into being. It was slow work at the start, and then Sir Francis Watts took up the cudgels and we felt more sure of our success. The Colonial Liberal Club gave the movement considerable help, first at an "At Home" at Lord Glenconner's, when Sir Alexander Lawrence, the honorary secretary, introduced our Editor to Sir Edward Grey (as he was then), one of the Commissioners who visited the West Indies in 1896 to report upon their industries and prospects, and so gave us a chance to discuss the matter in influential quarters. In 1913, Ceylon started to go ahead and the West Indies rather hung in the balance. "Nothing doing," wrote one man home; but we did not accept this as being the case, and once more the Colonial Liberal Club came to the help of our Editor, who was a member of their Committee, and arranged, in June, 1913, an "At Home," for which Sir Robert Perks was good enough to lend his house in Kensington Palace Gardens. On this occasion, spacious as his rooms are, they were crowded, and all the leading men interested in the movement were present and some of them spoke on the subject. Sir Norman Lamont opened the informal discussion and, among others, we remember Mr. Norman Grieve and Sir Edward Rosling, whilst the Editor of Tropical Life had the last word. Sir Francis Watts was present but did not speak. We considered at the time that at that meeting was laid the foundation-stone of the idea which we then felt sure would become a fact sooner or later. But at that time, and even up to the outbreak of the war, we thought that Ceylon would get her college first.

Thus it came about that a year later, in June, 1914, it was not surprising that the question of Agricultural Colleges in the British Tropics received full attention and was honoured with first place in the programme of the International Congress of Tropical Agronomists in London. Nothing could have been better; Professor Wyndham Dunstan, as President of the Congress, and father of the whole idea, was there, and it only wanted Sir Francis Watts (who was busy in the West Indies and could not get over) to complete the circle. All the same, as the published accounts of the Congress show, still further progress was made. Sir Francis Watts, Mr. Gerald Dudgeon and Dr. Gioli (of Florence) also our Editor contributing papers on the subject,

whilst Professor Dunstan in each case polished the corners and filled in the gaps. Directly after that came the war. We are still not quit of that pest, but for all that, the idea of a college at least for the West Indies has forged ahead, and once again Sir Francis Watts, writing from Barbados, on July 28th, gave us news as follows:—

"You will perhaps have heard that the Secretary of State for the Colonies has informed the Governors of Trinidad and Barbados, possibly the Governors of other Colonies also, that after careful consideration it has been decided that the site of the West Indian Tropical Agricultural College shall be in Trinidad. Now that this decision has been arrived at, I have no doubt that active steps will be taken to press on with the work of incorporating the College on the lines recommended in the Committee's report."

"We are glad to learn," states the *West India Committee Circular* of September 2nd (p. 258), "that a suitable position has been selected (for the College) on the Government Estate of St. Augustine, near St. Joseph, for the College buildings. This estate . . . seems ideal for the purpose to which it is to be now put. It has for many years been the local centre for cultivation and manurial experiments. It is readily accessible . . . . and should form an admirable site for the residential buildings, to the healthiness of which Sir Francis Watts very properly attaches the greatest importance. Trinidad has consented to provide £50,000* for the initial establishment of the College, besides its annual quota for maintenance." The Committee's *Circular* then goes on to discuss the probable support from the other islands towards the annual maintenance, and our contemporary knows the people of those islands far better than we do, although we are not entirely ignorant of them. All points to a hearty co-operative support, and so one can already picture Sir Francis Watts, who has done so much to help (and so must it be remembered of late has Mr. Moody-Stuart) the West Indies get their College, smiling benignly across from Barbados at the busy builders erecting the shell that when equipped will bring so much wealth, first to the West Indies themselves, and then, with the help of its students, throughout the length and breadth of the Empire. Meanwhile what of Ceylon?

WE like the idea of Messrs. A. and C. Black, Ltd. (whose book "Who's Who" is on everyone's shelf even if the present price, 42s. net, forces some of us to do with an old edition), in publishing a bibliography of those who have done useful work in the world, under the title of "Who *was* Who." As the book includes those notabilities who have crossed the bourne between 1897-1916, i.e., a period of twenty years, there must be a long list of interesting paragraphs, and the price in this case is only one guinea.

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* We do not find that this fact has become generally known, nor the offer of a similar amount from Jamaica, plus £5,000 annually if the college was established in their midst. Trinidad, however, was chosen as being more suitable and central. One cannot over-appreciate the value of these offers, for not only will they give men the chances of being properly trained, but will, by placing these thoroughly trained men at the disposal of the Empire, benefit us on all sides and in every way.

The ex-Warrior in East Africa.

WHERE WOMEN MAKE "BIG MONEY" AS PLANTERS.

ONE of our readers, who went through the S.W. African Campaign from start to finish, then saw the end of the war over here in the "heavies," and had, as dessert, a spell under Denikin in Russia via Constantinople, writes home as follows from the Government Experimental Farm at Kabete, B.E.A., under date July 30th:—

"I landed at Mombasa on July 10th and left for Nairobi the same day. One saw in passing on the way up herds of zebra, wilde-beeste, harte-beeste, gazelle, &c., the train finally pulling up in Nairobi on Sunday 11th. I have managed to get a decent bit of ground in the Trans-Nzoia, east of Mount Elgon, 2,600 acres. It is about ninety miles from the railway* and quite at the 'back of beyond.' The land I am to have is actually thirty-four miles N.N.W. of Eldoret, at about 6,000 feet elevation, with a permanent stream running through it—what more do you want for coffee?

"I shall probably start farming at the end of the year; at present I am wandering round from farm to farm, and find the residents most hospitable. Then I shall go as assistant manager on a plantation at Lumbwa until I trek up to my own land from there; it will take me three weeks to get there and back. What it will take with my oxen, wagons, implements, seeds, &c., in December remains to be seen. When I do get there finally I shall get in my coffee, live quietly and await developments—doing so upright in the open, not lounging in a chair with my feet above my head.

"In a year or two's time much can and will have happened, and I shall then start to think of picking coffee. In the meantime the game around will reduce costs of living and vary my diet in a pleasant and healthy manner, whilst the hides will come in useful for harness and other necessities. I can grow maize, wheat, vegetables, &c., and run a few cows and some pigs. If I can get in fifty acres of coffee during the next three years I shall be alright. As I mean to be alright, those fifty acres must be cleared and planted.

"It takes coffee five years to grow from seed to fruit bearing. My first work, therefore, will be to put in ten or twenty acres of plants about fifteen months old, thus getting a light crop in three years and a heavier one in four. Here everyone becomes fascinated with coffee, women as well as men, and small wonder. I have met two women farmers or planters who started seven years ago and are now knocking up about £2,500 per annum each to-day. They are not farming together, for one is near me here at Kabete and the other is a good hundred miles away. They told me that it was a struggle to make ends meet at first, and even through the first four years, but once their coffee started bearing they knew they were alright. Of course they have been sellers on the top of the market,

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* In September we believe a start will be made to lay a new line of rail, and the Government would be wise to run a branch line or a loop through this really fertile area and open it up. Its fertility and the class of steady settler that it is attracting entitles the area to such help in order to enable it to be better developed. —ED., *T.L.*

and were lucky on that point, but they deserved the luck they got.

"The other day I saw coffee trees twenty years old—said to be the oldest in B.E.A., and still bearing and doing well. Fifty acres of five-year-old coffee give, I understand, a profit of about a thousand a year. I like the life and the people here. They seem to be getting things done and doing their bit to help win the Peace for the Empire by developing the resources of this fertile country. We have our taste of fun too, and enjoy it all the more because we develop that also. You cannot buy your fun here all ready made, as you could at the Victory Balls in London. Do you remember how Alfred Noyes had a dig at the dancers at these revels in the *Saturday Evening Post* the other day, especially in these four out of the nine verses?

"The cymbals crash and the dancers walk,
With long silk stockings and arms of chalk,
Butterfly skirts and white breasts bare,
And the shadows of dead men watching them there.

. . . . . .

"'What did you think we should find,' said a shade,
'When the last shot echoed and peace was made?'
'Christ,' laughed the fleshless jaws of his friend,
'I thought they'd be praying for worlds to mend.'

. . . . . .

"'Pish,' said a statesman standing near,
'I'm glad they can busy their thoughts elsewhere.
'We mustn't reproach 'em, they're young, you see.'
'Ah!" said the dead man, 'so were we.'

. . . . . .

"Victory! Victory! on with the dance!
Back to the jungle the new beasts prance!
God, how the dead men grin by the wall,
Watching the fun of the Victory Ball."

"From what I have seen of the folks round here, the dead men would not grin, but applaud their efforts to straighten things out. If you in London want something worth while to get your thoughts busy over, jazz over to B.E.A., but not after you arrive, and put in some years of steady hard work, for, as I have shown, women as well as men can do so, and have been rewarded for their grit. I only hope that I shall do as well as they."

A Mule in the Vegetable Kingdom.

According to the London correspondent of the *North Queensland Register*, a Queensland agriculturist, Mr. F. J. Moore, of Lion Creek in the Rockhampton District, reports a peculiar experience with a bunch of bananas. The banana clump that bore the bunch is growing alongside a small paw-paw tree, and there seems to have been some act of hybridization. The bananas look like small plantains, but on being opened they are full of seeds resembling paw-paw seeds. As bananas they are spoilt, and Mr. Moore desires to give publicity to the occurrence in order to warn banana growers of the risk of similar hybridization if paw-paws are grown in close proximity. Mr. Moore is planting the seeds from the bananas in the hope of something coming up. Queensland has an ideal climate for banana cultivation, and doubtless will figure in the future as one of the greatest producers of this fruit for export in fresh and dried condition.

"Cocos Nucifera"—its Second Edition.

By Dr. F. W. T. Hunger.

In our issue for May, 1917 (p. 75), we reviewed at some length Dr. F. W. T. Hunger's book on the coconut, published under its scientific name of *Cocos nucifera*, by Messrs. Scheltema and Holkema's Boekhandel, Amsterdam. This time we have to welcome the second and much bulkier edition of this work, one which, in face of the paper shortage, left us envious of its bulk though extremely glad that sufficient paper was available in Holland (one wonders how many florins or guilders per oz. it costs over there?) to allow this experienced authority to give us such a wonderfully full account of the coconut, technically, scientifically, from a point of view of trade, national and international, as well as fully discussing the varieties, their production, crop, and preparation for market, with a very full section on oils. The question of pests is both exhaustively discussed and very fully illustrated with coloured plates and illustrations in black-and-white. This portion of the book will, we feel sure, attract as much attention from others as from ourselves both on account of its length, the quality of its information and the able way the facts and names are classified and, above all, on account of the plates. As with the first edition, the work is in Dutch, but if we can come to terms an English edition will be published. The Amsterdam book, although only with a thick paper cover, weighs 50 oz.; it covers 518 pages, has 92 plates, 9 coloured plates, 2 maps and 34 illustrations in the text. The price is, we believe, fls. 40, or fls. 46 if half-bound.

Look out for your Index to the "International Review of the International Institute of Agriculture" at Rome for 1917, or else it may go astray, and you will be sorry when you see your neighbour's copy and realize what you have lost. Although two years old going by date, much that is contained in the Reviews of that year still holds good as progress in agricultural matters, even when made, does not get into print quickly just now, and will not do so until the world settles down. We feel, therefore, that such an index as the one before us is worth keeping, if only for its headings, drawn up both alphabetically according to the subject discussed, and by the (alphabetical) list of authors discussing them, say:—

I. Index of original articles, with their authors.

II. Subjects of agricultural importance with the number of the paragraph in which it appears in the Review.

II (B). Index of authors and authorities discussing the subjects in Section III.

III. Plant diseases, their names, hosts and habitats.

III (B). Authorities writing on above.

IV. Weights, measures and money of the various countries discussed and their English equivalents.

Quite a lot of work to draw up such a book, running into 129 pages, very closely printed in small type. One wonders how many thousands of cards were used in indexing it when one word—diseases—took 22 alone. Congratulations and thanks to Dr. Giulio Provenzal, the *rédacteur* responsible for its preparation.

Trade, Politics and Finance.

ON the face of things we agree with the *Indian Planters' Gazette* that it was unfortunate that India was not represented at the International Chamber of Commerce, which held its first meeting in Paris in June. Quite ignorant of the details of the case or the cause of such an omission, one feels that a country like India, European or native, should have occupied quite a prominent position at such a gathering. It is to be hoped that next time a native as well as a European delegate will be present. Both should be there if the gathering is to be truly international. The meetings are, we believe, to be held every other year, so that the next one will be in 1922. Much will have happened by then, not least of all in India.

As stated in Rubber Notes, attention is being called from several quarters to the state of affairs in America, so that producers must be very careful with whom they deal in the United States. In times like the present, reliable firms benefit by these periods of crisis; be sure, therefore, that those owing you money are reliable and not shaky. Financially things must be far from good, as *Wileman's Brazilian Review* takes the trouble to warn its readers, on the authority of *Babson's* for July 20th, that what America is now going through is probably but the beginning of a much higher rate of mortality among business concerns. "Throughout almost every line of industry failures are running larger than last year. Our advice to clients is to recognize this tend and gauge their credit lines accordingly."

When Governor Cox holds sway at the White House, we feel that things will go better in the United States. It is probably a pity he did not go there last March, instead of the one to come—after his election. We should have been more settled by now if he had.

There are others who feel that if things could only be induced to settle down in America, where, in theory, they have no reason to be as they are, the markets here would also be happier. No relief, however, is looked for until a new President is installed. Evidently there are those who consider that President Wilson should have resigned, for we notice that the *Observer*, commenting on the breakdown in the French President's health and the possibility of his having to retire shortly, goes on to say: "Should M. Paul Deschanel refuse to resign, France might be faced with a situation similar to what has been experienced for several months in Washington. But France is not the United States and M. Paul Deschanel is not Mr. Wilson. Rather than place his country in the slightest difficulty he would surely resign at once. Some say he has already handed his resignation in writing to M. Millerand."

Leaving France and America for another large and entirely spoiled market, we were interested to see that Anatole France is reported to have said recently that it "is difficult for Americans to understand what the coming of President Wilson to Europe did . . . what it did to President Wilson himself. When he came he was the most acclaimed man in the world. To-day he is broken, not only in health and not only in the eyes of Europe, but also in his own country." One wonders which is the most wanted, President Wilson to leave the White House, or his countrymen to see him go. The creator of Sylvestre Bonnard is silent on this point, but not as to the possible future of Russia. "Out of all the disintegration of the war," he claimed, "I think one nation may recover—Russia. There is something new coming from that quarter. There is all the travail, strength and agony of something great being born there. Nothing doomed to early death could rouse such a stir of emotion throughout the entire world."

Whilst, as we reported last month (p. 119), distributors are said to have in view the possibility of increasing the price of tea to the consumer by 50 per cent. (we take it that this means, if the rumour is correct, the price exclusive of the duty), the *Observer* and other papers are telling us that we have over six months' supply at the docks, which have become so congested that new arrivals have to be sent elsewhere than London. In the handling of the tea imports, it seems as if the Government is mainly guided by the Consumers' Council! Is it the consumers who want to see the price increased by 50 per cent., or the Council, or who?

Many, if not all, kinds of sugar other than white may now be sold free of control except as regards maximum prices. With America talking of sugar at 9 cents, as against 20 cents or more, the question of maximum prices must surely be quite out of date. The query is rather as to what *average* price can holders look, by the time present holdings in the U.K. have been disposed of. With larger supplies for the moment and more reasonable prices, it is to be hoped that the demand for raw cocoa will improve. Whatever price, however, sugar may drop to, it is more than foolish to talk of larger supplies, as some are doing, as if we were well ahead of recent crops. Whatever happens we are bound to be a long way behind the pre-war per capita consumption, and the fact that people have got used to this is why the price of sugar has come down with a run. It certainly is not due to any noticeable increase in the world-output of sugar, nor can we expect supplies to catch up with the world's demands for some years to come. We are already wishing to rid ourselves of the shackles of restricted allowances, what therefore shall we need of sugar alone, when the increased populations with higher wages in every country clamour at least for pre-war allowances? As we have already shown, 22,000,000 tons of sugar will be needed instead of under 16,000,000, or at the rate of 24 oz. of sugar instead of 16 oz.

Those who wish to challenge this statement should study Mr. McCurdy's (our Food Controller) speech at the luncheon given on Saturday, September 18th, at the opening of the Grocers' Exhibition in London, when this distinguished Labour M.P. claimed that, apart from any effect on prices due to a coal strike, next Christmas would find a working-class family paying nine shillings and sixpence a week more for food than was the case last Christmas, when prices already were considered abnormally and unnecessarily high.

We would further claim, as we have been doing for months past, that even next Christmas may not see prices at the top, much less over the top, and the British Food Controller's remarks shows that he is of the same opinion, for no one can pretend that

Germany will have secured the credit necessary to make her an important buyer against the world within three or four months time. By next March, it may be, that a fuller German demand for the prime necessities of life, i.e., coffee, sugar, vegetable-oils, copra, rubber, &c., will really begin to make itself felt. When it does, then we shall see—what we shall see. It is to be hoped that cocoa and rubber will then be selling as readily as they were early this year, or as copra, vegetable-oils, and sugar or cotton are selling now.

Whatever the crop, producers and exporters abroad or distributors and manufacturers on this side must one and all note what Mr. McCurdy had to tell us, especially the following words:—

"The crucial time with regard to food prices has not yet come." Yet butter is at 4s. 6d. per lb., bread at 1s. and tending to 1s. 6d. a quartern, sugar 1s. to 1s. 2d. per lb., and soon: "The crucial time will come when the people of Central Europe (who, for reasons which all understand, have hitherto been unable to compete with America and Great Britain in the markets of the world for the limited supplies of food and raw materials) obtain credit and become competitors with ourselves . . . when Germany obtains the credits that are absolutely necessary to her economic restoration and becomes a competitor with ourselves (for food supplies, raw materials, &c.) in the world's markets."

All along we have been urging our readers to remember that such a time as Mr. McCurdy foretells is sure to come. It cannot long be delayed now. If, therefore, prices to the housewife are as high as they are to-day, what will copra and vegetable-oils, cocoa and rubber, &c., go to when the over-lenient Allies give Germany money to buy against our own housewives and so further raise the cost of foodstuffs, &c., above even to-day's rates. When the rise does come, let us hope that cocoa and rubber get their share, especially rubber, for if Labour on this side does not know how to spend its over-large wages, the planters abroad can and will make excellent use of any increase in prices and proceeds that they may receive.

The Food Controller also went on to explain why coal miners buy butter in place of margarine. Probably it is pure prejudice in the same way as, having the money, they insist on having English beef and mutton, and so have raised the price of meat. Mr. McCurdy, however, claims that the pit-gas does not affect the butter as it does other grease, presumably margarine, and cause it to go bad in a few hours. It would be interesting to test the truth of this in order to see if, with margarine, such a defect cannot be remedied.

Coffee sales include peaberry Mysore up to 137s. 6d. and low middling greyish to good middling at 110s. 6d. to 121s. Coorg kinds sold up to 118s. for good colory. With Jamaica, good middling Blue Mountain towered as ever before, well above other kinds, selling at 171s. 6d. to 173s. 6d., bolder at 179s. to 182s. 6d., and peaberry up to 199s. Java Robusta, 74s. to 75s.

With Cotton unfavourable reports caused prices to run up, in some cases in America one hears to over 100 points at time, closing at 19·65d. for fully middling for September down to 17·36d. for next June delivery. Manila Hemp seems to have touched £68, or even more. Shellac is at 670s. for fair T.N. Orange. Tin is around £269 to £270, and Copper at £97 or a little more.

New York exchange tends to go more against this country and Continental exchanges all work to discourage business. Silver went over 60d. an oz., but is, at the time of writing, below this figure. As long as silver keeps up so will copra. Judging by the way Japan is buying diamonds, and making millionaires "over-night," China and Japan are likely to keep the price of silver at a high level.

The following is a comparison of the principal points of the returns of the Bank of England at the present time compared with the corresponding week last year:—

September 11th.	1920	1919
Bank Bullion ...	£128,077,317	£88,266,260
Reserve of Notes ...	14,096,645	23,549,115
Private Securities ...	76,340,750	83,297,031
Notes in Circulation ...	125,908,565	81,127,495
Rate of Discount ...	7 per cent.	5 per cent.
Price of 2½% Consols ...	46¼	50½
Price of Bar Silver ...	59¼d.	61¼d.

The London Cocoa Market.

By the Editor.

Since my last report we have had a perfect mountain of sales—29,000 bags—and out of it crept nothing, not even the proverbial mouse. There were only trickles that told you nothing. Imagine a mountain with all the leading cocoa men in London and the Provinces standing in a ring round it, either in person or by proxy, anxiously watching as the minutes go by for a sign, or a sound to break the past four months' silence, by which they could positively say what the value of their various growths stood at to-day. As I have said, no sign came, and the group broke up and went off disappointed and puzzled, more puzzled than ever. What can they say to their friends abroad? What advances can they offer on the shipments between now and Christmas, or March (1921), and most important of all, what of the advances already made? Like the manufacturers, they are handling cocoa at 110s., 120s. and over, and if they have advanced 75 per cent. of the then value—well, no more need be said.

Of course, all the queries as to values remain unanswered. On paper you can say what you like and put Trinidads at 90s. for good middling and 93s. to 95s. for the best marks, with fine Grenadas 5s. lower; but paper quotations do not help much, unless it is to compare with paper quotations elsewhere. Our Home Consumption is excellent, practically double that of the last complete pre-war year, although everything is against its being so, the huge price of sugar, the outrageous cost of labour and appliances (or what we are told they cost), and consequently, the high price of the finished article to the consumer; in spite of all these, the demand keeps as good as if the war were still on. Think, therefore, what it will be—not in the U.K., but on the Continent—when Central Europe has got into its stride, and pulled up their

wages to our level and so have had their spending capacity increased as it has been over here.

On this side, for that reason, we must not expect consumption to go on increasing because, although Labour does not think so, the cost of the work done in the U.K. cannot go on increasing indefinitely. As it is, I should imagine, certainly I should hope that, taken on the whole, we have come to the top or nearly so. More and more reports are being heard of over-high costs in this country, and, through that, of firms already having to shut down. One cannot be surprised that this is so, and as the Continent grows stronger and stronger (and becomes, through that increased strength able to buy more and more cocoa, raw and manufactured, and thus help to remove the slump from the market), so will our at present overpaid labour forces become weaker and weaker, for imported goods, as Ford's cars already do, will become so much cheaper than our own, that either there will be no market for the over-costly English wares, or else the price of labour must run down, and so there will be less money to spend on needless extravagancies and more, therefore, on chocolate and confectionery. It will therefore be as broad as it is long but far safer, as the demand will be spread over a wide area, and so planters will not be at the mercy of one or two markets only—England and America—and be badly left in the lurch by both as at present.

Longing eyes are turned to this already smouldering Continental, especially Central European, demand, and keen eyes are watching for it to break into flame. Some again are looking to Russia, hoping that in face of current events even she can become a buyer in the none too distant future. Readers, however, of books like Mrs. Philip Snowden's "Through Bolshevik Russia" (price 5s. net), must realize that we are months and months distant from any chance of Russia being a useful market like the other big countries of Europe. If a leading Socialist like Philip Snowden's gifted wife has nothing better to say of Russia and her rulers than is to be seen in this book, that country must be struck off the map as a useful market for cocoa for a long time to come.

Coming back to our own consumption figures, therefore, for which we are truly thankful, it will be found that during August only the U.K. received 8,369 tons of raw cocoa, or 524 tons more than last year, and delivered 3,677 tons for Home Consumption whilst exporting 3,416. This gives us a total delivery of 7,093 tons against 7,133 tons during August last year, our Home Consumption being 468 tons less and export 428 tons more. Here are the figures for the eight months:—

Board of Trade Figures—January-August.

	Landed Tons	Del'd. H.C. Tons	Export Tons	Stock Aug. 31st Tons
1913 ...	24,860	18,072	4,755	10,650
1918 ...	12,851	41,696	583	14,250
1919 ...	97,463	39,723	8,152	69,150
1920 ...	92,285	35,625	24,004	74,050
	Decr. 5,178	Decr. 4,098	Incr. 15,852	Incr. 4,900

Our total deliveries, therefore, are maintained; only, of course, one would like to see the Home Consumption figures 5,000 tons more instead of less. One can but hope that the export will grow. At present, so far as Accras are concerned, things are comparatively satisfactory, even America showing signs of taking an interest in them, whilst Holland and Germany are also buyers. France would be so, but ill-luck still dogs her steps in trade as in reconstruction and politics; one can but trust, therefore, that she will get her due in both respects in the nearer future far more than she has been doing in the recent past. When she does perhaps she will be a little more fair to the English merchants in ex-German areas in West Africa.

Exchanges continue to go against this market as they increase the cost of the Continental trade, and there can be no relief from there for an indefinite period on that account, any more than oil-crushers claim that no lowering in the price of copra can be expected whilst the price of silver keeps so high. In their case it is the buyers who are hit, with cocoa it is the sellers.

On the question of exchange, the London trade paper, *Confectionery Journal*, gave some interesting comparative values of the Continental currencies, which I have reproduced below, together with others of my own. Each are compared with £1 stg. or its United States equivalent $3.49:—

		Old value			Present value per £ stg.
France ...	francs ...	9½d.	or 25·2 to	£ stg. ...	53
Italy ...	lira ...	9½d.	,,	,, ...	81
Swiss ...	francs ...	9½d.	,,	,, ...	21·55
Spain ...	peseta ...	9½d.	,,	,, ...	23·87
Austria ...	krone ...	10d.	24	,, ...	?
Denmark	,, ...	1/1⅓	18·2	,, ...	25
Norway ...	,, ...	1/1⅓	18·2	,, ...	25
Sweden ...	krona ...	1/1⅛	18·2	,, ...	17·15
Germaay	mark ...	11¾d.	20·4	,, ...	194
Holland ...	guilder ...	1/8	12	,, ...	11·20
Brazil ...	milreis ...	1/0¾	19	,, ...	12 ⅜

Here you have in a nutshell one of the great troubles that the raw cocoa market is up against. If the coal strike in the U.K. comes to stay it will further aggravate the position here and give us a taste of how difficult it is to be getting on either with sugar making or cocoa and chocolate manufacture on the Continent whilst their coal supply is so uncertain and transport unsatisfactory.

The Havre returns, according to M. Anthime Alleaume, show that during August 58,897 bags were received, including 18,305 Guayaquil, and 51,380 delivered, including 21,563 San Thomé (against only 2,265 received), 10,349 Guayaquils and 8,816 Bahia. Finally, we have a stock on August 31st of 364,220 bags, as compared with 356,703 bags at the end of July. Here are the details:—

Havre's Stock, August 31st.

	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará ...	4,039	212 to 220	11,166	185 to 195
Bahia ...	45,251	185 ,, 203	40,154	185 ,, 197
Venezuela	32,733	225 ,, 305	15,362	210 ,, 245
Trinidads	60,382	212 ,, 215	32,898	212 ,, 217
Grenada & O.W.I.	10	198 ,, 212	5,664	170 ,, 185
San Thomé	70,335	175 ,, 210	19,361	175 ,, 200
San Domingo	36,273	183 ,, 488	3,737	175 ,, 180
Haiti ...	38,204	167 ,, 198	20,152	155 ,, 175
Accra	31,234	172 ,, 175	127,679	174 ,, 180
Guayaquils	14,430	255 ,, 270	94,175	202 ,, 207
Others	31,339	—	2,132	—
Totals	364,230 bags		372,480 bags	

The French statistics are still very much behind (so they are everywhere, including the exports from the Gold Coast, from Bahia, &c.), so that we have no later returns as to their consumption since June, when 26,891·5 tons (of 1,000 kilos) were taken into Home Consumption and 9,300 tons were exported (for all France), against 23,000 and 8,328 last year and 19,740·5 tons for Home Consumption and 10,618 exported in 1918. The stock for all France at that time, June 30th, was 42,892 tons (21,098 at Havre, 8,165 in Paris, and 7,568 at Bordeaux), against 32,584 last year and 30,933 tons in 1918.

London on September 11th had on hand 302,563 bags as under. Since the middle of July her stock has remained steady with this quantity as a very fair average.

London Stock, September 11th.	1920 Bags	1919 Bags	1918 Bags	1913 Pre-war
Trinidads	53,213	39,564	6,434	26,849
Grenadas	31,999	17,537	10,759	28,453
Other W.I.	20,574	6,772	2,908	25,028
British African ...	38,824	36,726	32,900	62,681
Portuguese African ...	2,104	7,320	40,033	13,530
Cameroons	1,378	3,095	1,936	12,540
Ceylon and Java ...	22,859	7,437	11,980	38,657
Guayaquil	82,102	9,253	16,361	48,813
Bahia and Brazil ...	1,417	984	2,337	7,315
Other foreign	48,093	10,393	7,001	8,280
Totals	302,563	139,081	132,649	272,146

Lisbon at the end of July (for August's figures have still to come) had 124,910 bags on hand, against 213,974 bags in 1919. During July 13,312 bags were received and 2,883 delivered. The other day I had a letter from Messrs. Francisco Mantero, Ltd., in which they were good enough to give me the following details. In 1919 the total exports from San Thomé (and Principé) amounted to 775,842 bags, of which 420,921 went to Lisbon and 354,921 bags elsewhere. This, of course, included supplies that could not be got away in 1918. During January-July this year, I believe, 305,905 bags were exported, of which 222,485 went to Lisbon direct. Havre, it is rather interesting to note, received 134,507 bags of San Thomé between January-August (against 19,367 last year), whilst of Accras she has had 61,865 against 163,914 bags in 1919, so that with receipts the position was reversed.

The Gold Coast in August sent the exports to the end of April only; those, therefore, who are anxious for the latest returns have been disappointed in their hopes. With an export of 15,555 tons in April, we get a four-month total of 65,907 tons from there, or an average of 16,000 tons a month. What can we look for, as the average monthly export to the end of the year, would 10,000 tons be too much? If not, that would mean 80,000 tons to come or 146,000 tons for the twelve months.

Talking of this following on the San Thomé output and her delayed 1918 exports, moves one to ask what proportion of the 74,000 tons that the Board of Trade shows us to have had on hand at the end of August is really fit for consumption, and what proportion—if any—should be condemned and destroyed? San Thomé parcels at Lisbon and elsewhere must be in the same condition. One wonders what will become of such cocoa.

The Guayaquil receipts to the end of July show 500,911 quintales received, against 500,580 last year, practically the same amount.

Reports to hand from Bahia, *not* from cocoa market men, but those dependent on the well-being of the industry for their living, speak despondently of the state of the crops and the havoc that thrips are playing out there with little or no effort being made officially, and therefore on a scale worth considering, to combat the evil.

"During the last two years," I am told, "things have remained much as they were. Nothing whatever has been done with regard to improved methods for drying or improving the quality of the beans, also to inquiry how the pests and diseases attacking the trees can best be disposed of. In all this, the planter has been left to work out his own salvation. The place is still without the promised experimental station and centre for information. Suitable roads are also required; the absence even of mule tracks being so complete that the muleteers use the railway lines, which does the tracks no good. Even to reach the railway is difficult and causes much loss."

The April figures have still to be received, but probably the present outputs are running around 650,000 to 670,000 bags a year, against the maximum years, as in 1918-19, with 801,000 bags, both delivered and exported. The reduction in output, it is considered by those who have really studied the matter, is due to thrips, which have apparently been busy this year, encouraged to be so by the lack of rain (rain washes them away, or at any rate discourages their presence, possibly because the trees become more vigorous, and, as we pointed out last year (July, p. 98), health and vigour are *the* greatest safeguards against the pest). As it is, the chief cocoa-producing centres seem to have had, throughout various areas, an average rainfall only of 43 inches in the seven months, January-July, or but little more than 6 inches a month, as against nearly 9½ inches normally. The mosquilla pest, on the other hand, does not seem to have done much harm.

Mr. Hull, of the Ilheos-Itabuna Railway, goes to prove this by the following figures, which would, I am sure, interest Professor Urich out in San Thomé if they reach him in time. The average output of some estates which were six years old in the 1915-16 crop and put out 75 bags each during that crop, increased to around 200 bags in 1916-17 and 300 in 1917-18, but in 1918-19 the output dropped to 92 bags and in 1919-20 to 96 bags only. In another case, an estate with a recent record of 750 bags seems likely to produce 200 only. This is put down to thrips which appeared in 1918-19, and immediately the output of cocoa fell away. By the way, those having really useful means of drying cocoa on a large scale should communicate with Mr. Hull, c/o the Ilheos á Conquista Railway, P.O. Box 4, Ilheos, Bahia, Brazil, as there are said to be many out there anxious to adopt some plan of drying their cocoa *en masse*. There is nothing new in this desire, but as it is the railway company which is working to encourage the idea, it is likely to become and to remain a more stable demand than before.

Although the market is so dull, there is much to write about, but I have no room to say more. I would, however (wishing to see France, or any other country,

consume, and therefore buy, as much cocoa as possible), call attention to the extremely unsatisfactory state of the coal supply in France, thanks to Germany's scientific and, of course, wilful destruction of France's sources of supply, and the limp way, entirely favourable to Germany and against France, in which this great harm to France's industries, including sugar production and cocoa and chocolate manufacture, is apparently being handled by the Allies. One cannot wonder that France kicks; kicking is altogether an out-of-date reaction against such treatment; one wonders what the end will be. We all know how President Wilson has mulled-up and misled people and things he has had the control of, from the movement for freedom in Korea to justice to France in Europe; one wonders, therefore, when this obstacle to the world's happiness quits the White House next March, whether the new President, Harding or Cox, will support France in her demands for adequate and *actual* supplies of coal from Germany or elsewhere so that all her industries can go ahead, including the making of sugar and cocoa or chocolate. We all know that you can generate gas without coal, and gas too of a dangerous and misleading nature, as some thousands of misguided Koreans, who believed in President Wilson, have found out; but France cannot go ahead with her sugar-making and therefore with her cocoa and chocolate industry merely on " gas " until she gets her fair and very full share of coal. If you think I am too severe, read M. Edouard Gruner's speech to the Society of French Civil Engineers. I understand that some 220 mines have been ruined for years, in some cases perhaps for ever, and that this destruction in most, if not all, cases was never justified. And yet there are plenty of people who say the Germans must be let off. Well, so there have always been such fanatics for leniency in the case of the worse and most brutal bandits and brigands. If you are only bad enough, even a German can become a saint and a hero in the mind of the public.

Meanwhile, if France was not so pinched for coal the raw cocoa market would not be so flat, and our producing Colonies would be better off.

Coming to prices, one can only talk of Accras and then suggest that you build up other rates on their basis. The extremes in Accras seem to run from 52s. for common f.a.q. to 67s. for good fair fermented. Whether really fine fermented is worth more I cannot say. I would quote f.a.q. 52s. to 55s., barely fair fermented 61s., fair to good fair 62s. to 67s. On this basis you cannot put—speaking of useful rather than merely of sentimental values—the best Grenadas, Jamaica's or St. Lucia's above 85s., or Trinidads above 90s., and probably 88s. They are worth more, but show no signs of realizing what they are worth, and if I had to finance some shipments just now, I would only do so on a much lower level than those I have just mentioned. Ceylons have sold at 145s. for small lots, and well over 100s., even, I believe, 120s. or more is said to be the value of Arriba. As in this column I want to talk of sale prices and not values, that is all I can say.

The London stock on September 18th stood at 296,642 bags, against 125,813 bags at Lisbon on August 31st.

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Next Year's (1921) Exhibition and Congress.

WE are glad to hear that marked progress has been made in the committee's endeavours to give cacao, raw and manufactured, the prominence it deserves at the coming exhibition. It should be remembered that 1913 was the 400th anniversary of the introduction of the Food of the Gods to Europe, but more has been done during the past four years to place it firmly on the pedestal of public approval that it now occupies, than can be claimed for the four hundred previous to the war. Then it was still a luxury, a sweetmeat, a refreshing beverage; to-day it is an absolute necessity that no one would think, any more than with sugar, of cutting adrift.

We were too late in 1914, in reminding the late Mr. Staines Manders of the above (and he was not slow in telling us, politely but pungently, what we had caused the industry to miss by our tardy memory). This time, however, the exhibition committee will be able to celebrate the anniversary with much more gusto, pleasure and knowledge than could have been done in 1914, because to-day the entire world, soldiers and civilians, economists and "first-nighters," alike, have all come to realize that among the first items to put down in the list of prime necessities, cocoa, in powder, block, or sweetened form, must always be near the top.

And so leading countries and firms interested in cocoa will be represented at the exhibition next year, whilst their experts will play a prominent part in the congress upstairs. Among the countries who have already booked spaces, which as a rule cover large areas, can be included Belgium and Colonies, Brazil, Fiji, France and the French Congo, also French Equatorial Africa, Gaboon, the Gold Coast, Haut-Senegal, Niger, Haute Volta, Ivory Coast, Madagascar, Niger (Military Territory), Portugal and Colonies, Sao Paulo, Senegal, Trinidad and the West Indies, also, we hope, the Philippine Islands.

Firms interested in raw cacao or the manufactured article who have taken space and who will take part in the Congress will be included indirectly through the West African sections of the London and Liverpool Chambers of Commerce, and directly by Messrs. Cadbury, Fry, A. J. Caley and Co., and the African and Eastern Trade Corporation (which has incoporated Messrs. Millers, Swanzy, and other West African firms interested in cacao). Drying apparatus and spraying appliances for the estates will also be to the fore.

Those attending the congress, and we have full permission from the committee to invite every cacao pro-

ducer, exporter, dealer and manufacturer to do so, must remember that many of the exhibits downstairs besides cacao beans, will closely interest them as important accessories to their industries will be included. Such exhibits will enable them to see the latest discoveries in vegetable oils, or the newest substitutes for when the "real thing" fails them. They will thus be able to learn much that is important to their work as well as interesting to their eyes and minds.

Hard white oils of good keeping qualities must attract the attention of cacao manufacturers; up-to-date white granulated sugars are of prime importance to them; if such flavouring essences as vanilla, cinnamon, the spices of the Indies, East and West, are still used (some folks say that they have long since been given up) all will be there to examine or compare. So will rubber moulds, and a hundred other useful articles for the chocolatier and confectioner to use, in order to hasten the work and preserve the delicacy and cleanliness of the establishment if it is to maintain its reputation. The West African section under Mr. Tudhope, and the West Indian section under Mr. Aspinall, secretary of the West Indian committee, with a dash of Captain Gilford Knight, the assistant secretary, thrown in, will be very complete, and we believe all the other chief producing centres have taken important spaces.

Meanwhile, may we ask our friends everywhere who will be sending in papers for the cacao or vegetable oil sections of the congress to let us, or the committee (per Miss Edith A. Brown, 43, Essex Street, Strand, W.C. 2) know at once, and to send us the name and a short outline of their papers, so that others will know what to expect. This has already been done in connection with the rubber sections, but those willing to read papers on cacao are behind in letting us have particulars.

Dr. Sack, and Dr. Van Hall of the Netherlands, Dr. Copeland or Prof. C. F. Baker and others in the Philippines, Mr. O. W. Barrett, now in Liberia, the Directors of Agriculture in our own colonies, especially Messrs. Stockdale (Ceylon), Freeman (Trinidad), Mckillop (Cairo), Tudhope, and W. H. Johnson, could and we hope will send in papers on cacao, cotton or coconut oils, for we need the last word from these centres to polish up our rusty memories. Then there is Sir Francis Watts in Barbados, or Mr. Cousins in Jamaica, and a host of oil experts in India, who can tell us about coconut and cotton seed oil, copra or cacao, if they can only be persuaded to make a start. When one remembers the lists of names at the two conferences in 1914, the International Agronomical one at the Imperial Institute, and the rubber and tropical one at the Agricultural Hall, we ought to have a splendid array of papers next June, but the time is getting on, so please send in the name of your paper, and give us some idea of the ground it will cover.

Louis Bonaparte-Wyse, formerly of Holbrook Estate, Ceylon, who died a little time back, left—out of his English estate of £37,701—Rs. 10,000 in trust for the Anti-tuberculosis Institute in Ceylon. It was well known, points out the *Times of Ceylon*, that the deceased gentleman suffered from chest trouble, which perhaps turned his mind towards the sufferings of others and so decided him to make so handsome a gift to the Ceylon Institute.

Louis Raoul Studolm Bonaparte-Wyse, to give him his full name, was the second son of the late Lucien Bonaparte-Wyse, son of Lucrezia Bonaparte by her marriage with Sir Thomas Wyse, a distinguished British diplomat. Lucrezia was the daughter of Lucien Prince of Canino, whose courage and capacity saved the Great Napoleon from failure in one of the great *coups d'état*. Unlike the others, he refused to marry to order and so remain obscure.

This reminds us of another Napoleonic souvenir, more tragic in nature, and this time connected with Napoleon III and Mexico, where the death of General Blanquet—a name almost unknown—breaks off short the chain of lives connecting to-day with the Napoleon-Maximilian tragedy.

When the head of General Blanquet was brought into Mexico City for identification recently, writes P. M. Fox in the October issue of the *Pan-American Magazine* of New York, the last act in a drama, which had its beginning in France under Louis Napoleon, came to an end. General Blanquet of to-day was, in 1867, an ordinary soldier in the army of Bonito Juarez, and as such formed one of the firing squad which executed the Emperor Maximilian at Queretaro on the morning of June 19th, 1867, eight months after his wife, the Empress Carlota (Charlotte Amelia, daughter of Leopold I of Belgium), broke down by the strain and anxiety of the intrigues and from overfatigue in trying to get help sent to Mexico, became demented, remaining so until a few months ago when she died, apparently without knowing the tragedy of her life and her husband's death.

Castor Oil Production.—No. V.

(*Continued from December* 1919 *issue*, p. 189.)

Oil Extraction and Pests.

Leaving pressure-extraction engineers to supply us with notes discussing the production of the oil from their point of view for a future issue, we had a long debate with a solvent extraction advocate which gave us much food for thought. Portions of the notes we made may prove not altogether useless to our readers interested in this crop, so we will jot them down before they escape our memory. We give them for what they are worth, but would advise anyone wanting to set up a plant to communicate with a first-class authority as Mr. Pooley, of Messrs. Geo. Scott's, Ltd., of Kingsway House, W.C. 2, before they start to spend their money, as times change quickly and we might not be so up-to date as we believe ourselves to be.

The extraction of oil from Castor Bean is an ideal case, for the solvent extraction plant inasmuch as the residue unless obtained by some such process is generally considered as valueless as a cattle food and only to be used as a fertilizer. It is essential, therefore, that the oil should be exhausted to the last degree. This being so, all must agree, since the solvent process alone seems capable of satisfactorily carrying the recovery of oil to the limit required for that extra yield of 6 or 7 per cent. of oil which solvents can alone call forth, it is a matter of great importance to the manufacturer. Moreover, when the meal is robbed entirely of its oil in this way it obviously

forms a much better fertilizer than the pressed cakes which still contain a considerable quantity of oil.

At the same time, to those with cattle to feed, it is interesting to know that recently it has been found that, quite contrary to former beliefs, the extraction process is able to turn out the castor meal in a form in which it may be mixed with other foods and fed to cattle without causing any ill-effects. This is actually being done at the present time and is past the stage of experiment.

Possibly in view of the nutritious character of such meal it forms a very material step forward in the development of castor-oil extraction. It is of course for manufacturers to consider whether they would institute the combined practice of taking a cold pressing for the castor bean in order to secure the highest quality of medicinal oil and from this stage forward pass the remainder through a solvent extraction plant for complete exhaustion whilst producing first quality industrial oil.

In the above connection it is interesting to remember that the makers claim for the "Scott" Patent Process that it will turn out a dry meal practically free from oil without any subsequent treatment, and since this is so, that in this particular their process stands alone when compared with its competitors.

The "Scott" process, which is of course applicable to all classes of seed for either edible or industrial purposes, depends on the use of both the vapour of the solvent and the liquid solvent. This not only produces the complete extraction aimed at, but hastens the process and is instrumental in securing the dry meal of the quality to which we have referred.

Discussing the danger from castor oil to tea and crops in Ceylon, Mr. F. A. Stockdale, Director of Agriculture in that Island, told us at the Entomological Conference that legally castor must not be planted in the tea area because it is, like the tea plant, liable to act as host to the shot-hole borer. On the other hand should castor prove to be a greater favourite to this dangerous pest, far from harming the tea, it might draw the pest from the main crop to the castor, which if planted by the tea-estate owner, could then systematically be searched for the pests, before they wanted to pass on to the tea. Whether this is practicable and if so, whether such interplanting of belts of castor has ever been carried out, we cannot say. Mr. E. E. Green, most experienced of entomologists, told us that the pest only attacked the older woody stems of the castor (as with tea, of which the older wood twelve months and older receives the most attention from these undesirable visitors), say when the plant is a year or more old, so that you can get one crop off it before trouble comes and, at the worst, the castor has to be cut out, and, for precaution sake, burnt. When you look back over your notes it is strange how everyone avoids telling you how long it takes the castor plant to ripen its first pods. All we are warned of is the trouble of cropping since the seed does not all ripen at the same time. We should have thought that this would have been an advantage as with a prolonged crop there is not that rush and large numbers of pickers needed for a short period and the hands left idle to get distributed afterwards.

The *Agricultural News* of Barbados for May 1, 1920, p. 138, when discussing some insect pests of the castor oil plant, told its readers that a correspondent from Bahia, Brazil, Mr. George M. Chard, recently favoured them with a communication on the subject of castor oil plant cultivation in that province, where he states that there are districts eminently suited to that industry. The vigorous growth of the plant, and the large amount of seed produced per plant, as recorded by Mr. Chard, seem to substantiate his opinion. Furthermore he claims that in Brazil the castor oil plant is absolutely free from attacks of pests and diseases. This is not the experience of cultivators in other parts of the world.

In Florida, for instance, as recorded in the *Quarterly Bulletin of the State Plant Board of Florida*, January, 1920, not less than five insects are listed, the larvæ of which do considerable damage to castor oil plants. The most troublesome appears to be the semi-tropical army worm (*Xylomyges eridania*), which during the summer of 1918 made its appearance in destructive numbers in Central and Southern Florida whilst the outbreak of the worms was very threatening, but means of control were promptly resorted to, and the pest kept under.

The larvæ attack all parts of the castor oil and of any other plants. The leaves apparently are preferred, the young fruit spikes come next, and then the petioles of the leaves and the tips of the plants are last attacked. The older worms, which congregate in the day time near the base of the plant, very generally eat off the bark there. Nearly mature spikes are not usually severely injured.

Besides the castor oil plant, cotton is probably next in favour as a food-plant of these larvæ. They attack the immature bolls even when plenty of foliage is available; they eat the bark near the base of the plant where numbers of the full-grown larvæ cluster; and the flowers are also freely eaten.

Four methods of control have been employed with satisfactory results: (1) picking the leaves on which egg-masses or broods of young caterpillars exist, (2) dusting with arsenicals, (3) spraying with arsenicals, (4) using poisoned bait.

1. *Picking Leaves.*—When plants are thoroughly infested with the larger caterpillars, this practice would result in defoliating the plants to almost as serious an extent as would be the result of the attacks of the caterpillars themselves. The method which has produced excellent results, it is stated, is to collect the leaves before the young broods have scattered.

2. *Dusting with arsenicals.*—It was found that using a dusting machine was the most practical method of application. The dusting mixture generally employed consisted of 1 part of powdered lead arsenate to 4 parts of hydrated or air-slaked lime.

3. *Spraying with arsenicals.*—The results appeared to have been very satisfactory. Lead arsenate spray was found very effective.

4. *Poisoned bait.*—The bait used consisted of one-half cotton-seed meal and one half rice bran poisoned with 1lb. of Paris green to 24lb. of the mixture, and sweetened with syrup. This was broadcasted on the ground, and gave good results in the destruction of the older larvæ which crawl on the ground from plant to plant.

Besides this insect, it has been found in Florida that the common corn ear worm (*Chloridea obsoleta*) had a taste for castor oil beans, and that the larvæ of *Laphygma frugiperda* also did some small damage to the plants.

(*To be continued.*)

Rubber and Cotton Notes.

The Outcry for More Tyre-fabric Cotton.

Taking the hint from those who claim that the high price of the long Egyptian strains of cotton, "Sakells" and other kinds most suitable for tyre fabrics, has caused makers to look upon cotton as the chief raw material to be considered rather than the rubber when making motor tyres as regards costs and supplies of the raw material needed to meet the public demand, we propose including a paragraph or two each month in this section on the subject of raw cotton production (suitable for tyre fabrics) as well as our customary remarks on rubber.

When prices have become normal again with long-staple cotton—and this will not be to-morrow—it would be interesting to study the returns of the six years 1914-1920, if anyone will be kind enough to compile them, and note the rise and fall in the Sakellaridis strain as a specimen of the height to which the value of raw cotton can soar when supplies are so far behind demand. We must own that this name is not so familiar to us as some of older varieties; we were only introduced to it recently, but having made its acquaintance, there seems no chance of our being able to shake it off should we wish to for any other kind.

The Deterioration in present Long-staple Cotton.

At the same time Kismet enters into the life of the world's favourite cottons as it has always done in the fate of those favourites who, in the past, wore the cottons of Egypt and elsewhere in their manufactured state. Like the loves of the harem also, the favourite of to-day, after usurping the place of an apparently invincible favourite of the times that are gone, knows but too well that sooner or later its attractions will deteriorate in due course, its qualities, once so commanding, will fade, and new varieties will come to the front whilst the old favourite is forgotten except by name. As these names are not too easy to spell when you are in a hurry, we will not attempt to recall them on paper. Any cotton man, however, will know them, and as it has been with them, so must the fact be recognized with Sakellarides, now the prima donna, but which also is certain to go back after a spell. It has been coming along for ten years or so, and this fact alone renders it necessary for every tyre manufacturer and fabric spinner to be thinking of how a new kind or kinds can be evolved to equal "Sakells," and if possible to surpass it. We shall be more than pleased to work with one and all, producers, exporters of the raw article, buyers, spinners and tyre manufacturers on this side to evoke the aid of all cotton-producing centres to come in and "down" Queen Sakellaridis by producing one still more attractive than she is, and still more useful and lasting when spun into the foundation fabric for pneumatic tyres.

Can Solid Tyres be Reinforced?

So much for cotton this month. Now let us turn to rubber, which after all still forms some portion of a tyre even if not the most costly part just now. Solid tyres, for instance, have no cotton, but ——. I went the other day to study the last word in reinforced concrete flooring and saw the "fuzzy" metal work, looking like rusty steel shavings off a metal-working lathe, being buried in the semi-liquid concrete. Coming back over London Bridge, motor-trolley after motor-trolley passed me in a line (a large Army type) with wide twin wheels each with many pounds of rubber tyre on them from which great chunks had been torn out, or if still attached, of no uses whatever. With my mind full of reinforced concrete, I wondered whether, with such a large make of tyre, anything could be done to reinforce solid rubber tyres, as I had just seen being done with the concrete, so as to reduce the loss of rubber through bad driving or other reasons. Brainy men no doubt have already tried to do something of the sort, so I will not enter the list to compete against them but simply mention the suggestion.

Long-staple Cotton in Arizona, U.S.A.

Harping back to cotton, we understand (from the *Queensland Agricultural Journal* for July, p. 2) that the cotton grown in Arizona, about which we have been hearing a good deal lately, consists of two varieties, Pima or American-Egyptian, and one or more short-staple varieties including Mebane's Triumph. As we know of two leading cotton-growing concerns over there we have written asking for fuller particulars.

The same paper reports the interesting fact that an excellent pamphlet on cotton-growing has been issued by the College of Agriculture, State of Arizona. The authors are Messrs. G. E. Thompson and C. J. Wood, and special attention is devoted to the American-Egyptian variety. It should pay Egypt to grow long-staple cotton long after Arizona has had to give it up because of the fall in value. Tyre-fabric makers, therefore, should bear this pamphlet in mind, as we are told that it contains many hints worth having, especially with regard to the quicker maturing of the shorter staple cottons. Meanwhile it is well to remember that leading experts at the recent International Cotton Congress at Zurich referred to the possibility of a decrease in the production of cotton in America on account of the ravages of the pink boll weavil pest, whilst in Egypt the increased area under crops other than cotton should encourage attention to the breeding and production of long-staple cottons elsewhere, as in Brazil and other places in South America, especially with the North American area on the decrease also.

Labour and Wages.

The *Planters' Chronicle* of Bangalore (Vol. xv, No. 37), opens with a long article dissecting the position of labour or the shortage of labour in Malaya, and comparing the position there with that of Southern India. Malaya, it claims, is faced with a decided reluctance on the part of the Tamil coolie to emigrate to the F.M.S. Last year, it will be remembered, in their issue of November 15th, we contributed a long article to the *India-Rubber Journal* at their request on the question of exchange, and at the time warned Malaya of the trouble that was certain to fall about her ears, sooner or later, if she insisted on fixing the value of the rupee in Malaya, thereby placing their coolies,

and especially the Indian and Chinese workers, at a great disadvantage with their countrymen outside Malaya. This policy may on the whole still have been the best all round for Malaya, but in the same way as it apparently took a good time for the unfairness of the fixed dollar to the coolies to penetrate the minds of the labourers, so will it take a far longer time for the memory of it to leave that mind. There are thousands of Indian and Chinese coolies in the West Indies, colonies where they also tried to "clip," and did "clip," the meant-to-be wage of the emigrants. They too will suffer before long as indentured emigrants are no more, and the free labour willing to go there is sure to be far below the Colonies' requirements in the same way as they seem likely to be in Malaya. Now, no doubt when too late, both centres will offer bigger wages, bigger even than those which when first asked for caused discontent. "The F.M.S.," we are told by the *P.C.*, "is apparently prepared to pay for its labour on a scale which is an eye-opener to most people." What does the West Indies say to this? Why have both East and West waited until now, instead of meeting a fair demand for better pay in a fair manner long ago? If sugar is up to-day and rubber is down, when rubber was up the price for sugar was low. Whatever the price to the owner, whether high or low, the wages to the labourers must be on a reasonable level. This has not by any means been the case at times in the past. Where are those who wrote telling us we had made a mull for saying what we did in the *I.R.J.*?

The Coming Exhibition.

As stated on the first page when discussing next June's Rubber and Tropical Exhibition with regard to cacao, the demand for space has exceeded expectations, whilst those interested in the Tropics for scientific as well as for economic reasons have noted with pleasure the all-round nature both of the exhibits as well of the leading men who are taking a real live interest in the affair. Leading rubber machinery engineers will be there, estates' agents, manufacturers, producing centres, makers of chemical and scientific instruments, all will have their champions, so that both upstairs in the congress rooms and downstairs in the exhibition halls a thoroughly representative show of all that is the best and latest in connection with rubber has already been assured. What more will be added by next June remains to be ascertained. We believe that when all is complete many of us, even the oldest ones, will feel silly because we shall feel so out of date in face of the newest inventions and improvements collected together and placed before us for the first time.

Contracts.

"Will you permit me, as London Agent for the Incorporated Society of Planters of Kuala Lumpur, F.M.S.," writes Mr. Charles Watney from Courtfield House, S.W.1, "to state very briefly in your columns that several types of contracts have recently been submitted to me which I can only regard as being in essential respects most unfair to those who are asked to accept them.

May I, therefore, in the interests of the rubber companies themselves and the planting profession as a whole, repeat that I shall be pleased to advise upon all contracts which may be offered to intending planters, many of whom are, I fear, very inexperienced in these matters." Planters everywhere, therefore, please note. As a rule we have found planters, especially rubber-planters, to be very well able to take care of themselves; but so many tales have been told of broken contracts (by buyers out of the U.K.) and repudiated orders, that the cleverest brain going wants to be careful. A dull man can say "No" and stick to it without harm to himself far more easily at times than a brainy man can, but in these days when it comes to the drawing up of contracts both he with the keen wits as well as he with the duller ones had better discuss the matter first with Mr. Watney.

A Firm who can Deliver the Goods.

Messrs. Hollings and Guest, Ltd., write us that, in spite of all one hears about the inability of some firms to deliver machinery, they are still supplying their well-known Tyre Presses in large numbers, having, during the last few months, completed numerous export orders, including the following destinations, amongst others: India, China, South America, Spain, Portugal, Egypt, Ceylon, Sweden, Denmark, Holland, Belgium, Dutch East Indies, New Zealand, Turkey, Persia, Mesopotamia, Transvaal, Cape Colony, Roumania, &c. They end up by saying: "You can therefore see that we are now in a position to give a good delivery of our standard Tyre Presses, and shall be pleased to send full particulars and prices to anyone interested."

Wileman's Brazilian Review, of Rio, must be widely read by rubber men in these days. It is not that they say much, but rather the way the statements are put that "fetch" you.

In their issue of September 15th, after showing the steady fall of Hard Fine in London since January 3rd, when it stood highest at 2s. 7½d., until September 11th, when it had come to 1s. 8¼d., against about 1s. 6½d. on October 9th, our contemporary goes on to say, when speaking of America's imports of rubber:—

"An explanation of America's temporary attack of indigestion with regard to rubber is supplied by the import figures. During the five months to May, the United States of America imported 137,000 tons, as compared with 97,400 tons in the corresponding period of 1919. This is at the rate of nearly 329,000 tons per annum, or not far short of the plantation production of the whole world. When this is considered in conjunction with labour and transport, particularly railway, difficulties and financial stringency it is not unintelligible that prices should be low and demand temporarily in abeyance." The present slump is all the more intelligible when one realises the number and size of the contracts entered into and not honoured.

Prices—such as they are.

There has been a steady decline in prices this week, ending October 7th, wrote Messrs. Lloyd, Matheson and Carritt on that date, and Standard Crêpe is about 2½d. down and Sheet 1¼d. Sheet, in particular, has been depressed by sales from the U.S.A., and news from Singapore speaks of Sheet as being down to 51 cents., say, 1s. 4¾d., only on the London equivalent, against 57 cents, or 1s. 6½d. for Crêpe.

Last week, however, there was more firmness with the recovery of a penny in values, so that quotations on October 14th were as under:—

Spot quotations—	1920 Oct. 14th. s. d.	1920 7th. s. d.	1919. 16th. s. d.
Smoked sheet (F.A.Q.) ...	1 4	1 3	2 3¾
Crêpe (standard quality) ...	1 6½	1 5¾	2 3¾
Parà	1 6	1 6½	2 6

Forward positions—	Smoked Sheet s. d.	Crepe s. d.
1920, October	1 4¼	1 6¾
,, October—December ...	1 5	1 7
1921, January—March	1 6	1 8
,, January—June	1 6¾	1 9

Stocks—	Tons		Tons
Plantation, London	Oct. 9th, 1920, 37,052	Oct. 1st, 1919,	25,954
Parà, Liverpool	,, 1st, ,, 550	,, ,,	660
	Total 37,602		Total 26,614

Vegetable Oil Notes.

CHINESE GROUND-NUTS GO TO JAPAN.

HONG-KONG'S export of peanuts in 1919 reports the *International Confectioner* of New York, was not up to the general standard of the trade for several reasons, chief of which is the fact that the supply of nuts from North China last year went mostly to Japan. Japanese dealers on the spot are often in a position to barter cotton piece goods and other Japanese products for nuts, and so secured the first choice of the northern crop, with the result that Hong-Kong exporters were not in a position at times to quote fair prices for acceptable grades of nuts. The United States maintained about the same proportion of the total trade in the two years. The exports of nuts in 1919 are returned as 19,346 short tons valued at $2,413,022, as compared with 53,400 short tons valued at $5,997,091 in 1918. Of this total, Great Britain took about an eighth, the United States about a quarter, and China about one-half of the whole, the rest of the supplies going to Canada, Australia, the Philippines, Siam, Egypt, and various countries of Europe. The supplies for the year, as usual, came mostly from North China, but also included considerable imports from Indo-China, the Straits Settlements, and Japan. In 1918 the nuts that entered New York came almost entirely from North China.

SOUTH AMERICA AND ITS VEGETABLE OIL SEEDS.

Dr. Richard Ferris, C.E., writes chattily in *The Pan-American Magazine* on the vegetable oils of Latin America, and points out that, instead of being at the top of list as a producer and exporter of vegetable oil seeds and oils, she is practically nowhere, and that only occasional and cursory references are made of the possible and actual sources of supplies south of the United States.

What principally attracted our attention, however, was the following table, which will probably be pinned up in many a vegetable-oiler's office, being nice and compact. We have bulked the tables together. In 1919, the United States received:—

Of oils—

China-wood	7,180,346 gls.
Coconut	281,063,213 lb.
Cottonseed	27,805,704 ,,
Linseed	2,152,378 gls.
Olive	9,306,590 ,,
Palm	41,817,945 lb.
Palm-kernel	1,927,493 ,,
Ground-nut	20,540,317 gls.
Rapeseed	1,116,706 ,,
Soya beans	195,808,421 lb.
All others	2,558,259

Of oil seeds—

Coconuts (whole)	85,081,922
Copra	258,637,781 lb.
Almonds (shelled)	28,007,208 ,,
,, (unshelled)	7,482,538 ,,
Brazil and Paradise nuts	43,076,348 ,,
Ground-nuts...	29,847.041 ,,
Walnuts	31,495.977 ,,
Palm nuts and kernels	5,610,056 ,,
Castor beans	1,208,266 bhls.
Flax seed	14,036,184 ,,

In the aggregate, the oils alone represent approximately 417,600 tons, and the new census speaks of the United States as having 105,000,000 people, so it represents about 8½ lb. of oil per head (in 1919). How does this compare with the U.K. and elsewhere?

A NOTE FROM THE PACIFIC.

A subscriber in Niue Island, South Pacific, again sends greetings to us and some refreshing thanks for following the interests of the tropics so closely in the U.K. and not forgetting their little island whilst doing so. At the same time he is asking, being surrounded apparently with many varieties of nuts, whether these have ever been classified. "Here," he tells us, "we have two main varieties of coconuts; the miniature nut is green and frequently elongated, whilst the other is fawn or of a light brown colour and round in shape. There are also some imported kinds which differ not only in shape and size but also in yield." We have not room here to answer this query now, perhaps later on we may be able to do so.

COCONUTS IN ECUADOR.

In Ecuador, once more reverting to Dr. Ferris' article in the *P.A.M.*, the coconut palm flourishes along the entire coast and is cultivated right up to the base of the Cordilleras. Great areas of the wide coastal plain are peculiarly adapted to its growth, having those underground streams of water running towards the sea in which the coconut particularly delights. To-day the copra industry of Ecuador could be made to rival that of the palmiest days of the Gold Coast of Africa (surely no great competitor in face of present day outputs, Ed., *T.L.*), now almost entirely given over to the growing of cocoa. The *Cocos butyracea*, a larger species than *C. nucifera* and richer also in oil, is indigenous to Ecuador, forming colonies or cocales in the great forest in the interior of the province of Esmeraldas.

Strange to say, Emm. Prudhomme, in his excellent book on coconuts, does not mention Ecuador as a centre of importance, so it will be necessary to look elsewhere. If the Ecuadorian nuts are *C. butyracea*, one wonders what the San Blas nuts in Central S. America are. Referring to the queries raised by our S. Pacific corre-

spondent in the previous paragraph, Prudhomme has much to say about the varieties of nuts according to colour, but not by any scientific name, and we do not think he mentions Latin America at all. It is, however, some time since we went carefully through his book.

Prices of Copra and Coconut Oil.

Copra has had a fling outwards and upwards since our last. Again at one time it almost seemed as if £60 would have been reached; perhaps if there had been any quotations for Malabar we might have seen such a price. As it was, Ceylon at £59 10s. and F.M.S. at £58 15s. have been the top figures in London so far as we have noticed. These were realized on October 3rd and 4th, and since then there has been a reaction until, on October 16th, F.M.S. had dropped to £52 10s. spot against £54 for Ceylon. Here is the usual table of rates:—

OCTOBER PRICES.

Copra per ton—Spot.

	London		Marseilles	Hamburg and Rotterdam.
	F.M.S.	Ceylon	F.M.	F.M.S.
	£ s. d.	£ s.	£ s.	£ s.
Oct. 16 ...	52 10 0	54 0	52 10	55 0 to 55 10
,, 13 ...	55 7 6 to 56 0	57 0	55 0	56 10 ,, 57 10
,, 9 ...	57 0 0 ,, 57 15	58 0	57 0	58 10 ,, 59 0
,, 4 ...	58 10 0 ,, 58 15	59 10	57 0	59 10*
,, 1 ...	58 0 ,,	59 0	56 10	58 5

* Ceylon £60 to £60 5s.

Coconut Oil per ton.

	Ceylon		Cochin	
	Spot	For shipment	Spot	For shipment
	£ s.	£ s.	£ s.	£ s.
Oct. 16 ...	92 0 ...	90 0 ...	— ...	93 10
,, 13 ...	96 10 ...	95 0 ...	105 0 ...	97 10
,, 9 ...	97 0 ...	95 0 ...	105 0 ...	97 10
,, 4 ...	97 0 ...	95 0 ...	105 0 ...	97 10
,, 2 ...	95 0 ...	95 0 ...	105 0 ...	97 10

Other Oils per ton.

	Castor Firsts	Ground-nut Crude‡	Palm kernel Crude Hull spot	Cotton seed Crude Egypt
	£	£	£	£
Oct. 16† ...	77 ...	80 ...	80 ...	62
,, 13 ...	77 ...	83 ...	87 ...	66
,, 9 ...	77 ...	83 ...	87 ...	69
,, 4 ...	77 ...	85 ...	88 ...	71
,, 2 ...	77 ...	85 ...	88 ...	73

† London Crude. ‡ C.I.F. for Oriental in cases.

The June Exhibition and Congress.

Do not forget the above. If you want to exhibit, hurry up and do so whilst there is yet time. In any case bring over all your latest finds in the way of oils and fats, whether for industrial purposes, as a raw material for soap, candles, &c., or for edible purposes. Bring them along to be discussed at the Congress, over which Mr. Richards Bolton, M. Baillaud (of Marseilles) and others will preside. Among the firms exhibiting downstairs, and where representatives will be interested in the vegetable oil section of the congress, will be the producing centres (and a few others like Egypt) mentioned on the first page, and firms who dominate the industrial side as Messrs. Lever Bros., Ltd., and the West African firms now merged in the African and Eastern Corporation, Ltd. The Far Eastern and the West Indian merchants and planters will also have much to show.

Mr. C. L. Royle on the Present Sugar Position.

Just now cane sugar is enjoying a pre-eminent position, and the question which naturally arises to anyone who thinks is, How long is this going to last? In answering that question, or rather when endeavouring to answer it, a general review of the sugar production of the world must be made, in order to try and ascertain not only what may or possibly will happen, but how far cane interests can and will exert themselves to hold their own, or at least defer as long as possible the day when competition narrows margins of profits until they approach, if not actually touch, the vanishing point as regards remuneration.

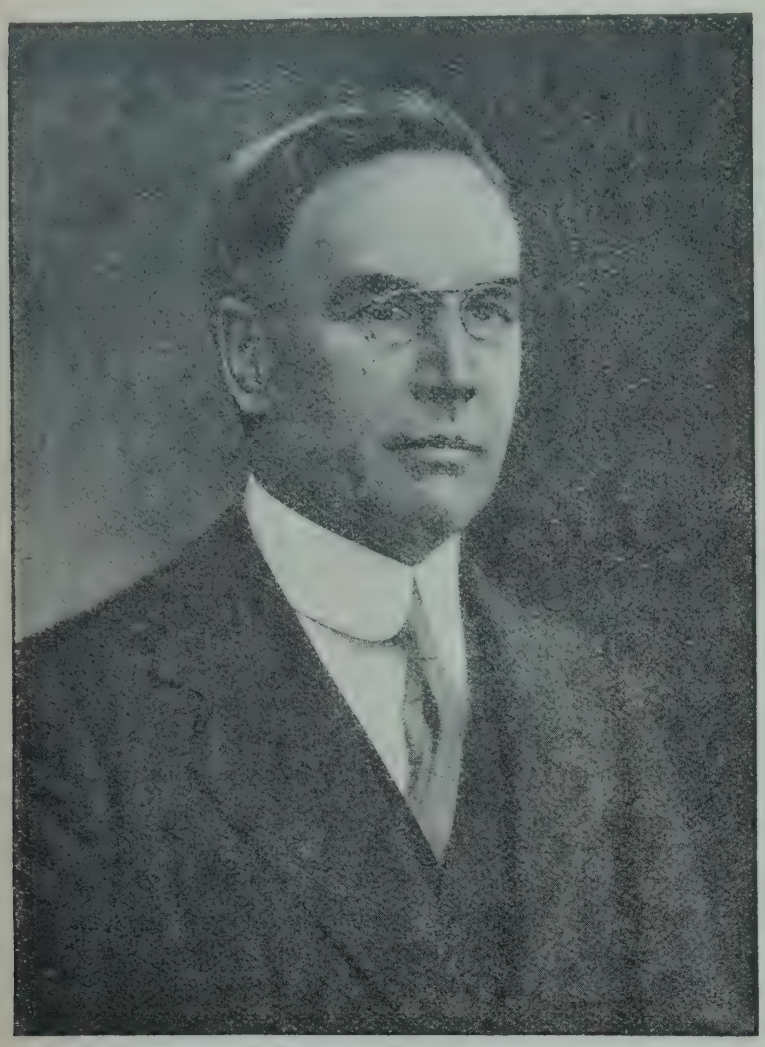
On the face of it, cane can do more than give beet a good run for its money, it can and should hold its own. When we, the British, with our vast tropical possessions, put as much or more scientific work and control into our cane cultivation as has been devoted to beet and bring our factories up to date, we shall have no reason to take beet into consideration, unless it be to enter the beet field deliberately, as we should do if we have to produce more sugar, beet or otherwise, to meet a deficiency that otherwise cannot be satisfied.

India in its cooler parts and in certain high grounds can produce beets; at present I can only recall one incident of beet production in India, and that was about twenty years ago, when some was grown at the Government Botanical Gardens at Ootacamund. No doubt there are other and perhaps larger experiments on record. India simply wants pulling out of her rut and being put on her feet, and then given a friendly but forcible "shove off." When this is done, she alone could feed the world's markets instead of being as now a drain on the other producing centres.

I do not pretend that India could emulate, say Peru or some other favoured spot producing, with irrigation, some fifty tons of cane to the acre, equivalent to about seven tons of sugar; but the figures of India's present yields are glaring enough to make one feel cold all over. It is not necessary to remind anyone acquainted with India that although it has a satisfactory rainfall yet a large bulk of its crops are supported by irrigation. It would be a very pessimistic point of view to hold that India cannot do more with sugar than she is now doing, but must go on being content with something more or less than a ton of sugar per acre.

Irrigation schemes are costly enterprises and can only be done by the nations interested, but when undertaken, as in Egypt, they have always proved very profitable to the promoters of the scheme and beneficial to the agriculturists, large or small.

We have the West Indies as well as the East Indies where great development can be made, and to which the same remarks apply, viz., Get busy. Whether British-grown sugar should have a preference, is a question for economists; but the cultivator needs to feel that he is to be looked after and secured in his position either directly or indirectly. Once he has this feeling he should and will go ahead, or if not, surely others can be found who will. Survey the early stages of production under British control—must that trail now be lost for lack of men? Surely not.



"Tropical Life" Friend.—No. 184.

Mr. C. L. Royle, F.C.S.

Sugar Chemist; formerly in India and now in Peru.

"Our Friend" first became coated with sugar when he joined a firm of London sugar refiners (Messrs. Abram Lyle and Co.) some twenty-five years ago; he then further and finally became entirely sugary when he left that firm for a second one, and then on to a third, this time in Greenock, later on going East to India for twelve years and across to the West, viz., Peru, where he is still located after a spell of nine years, all the time in connection with sugar. Altogether, therefore, Mr. Royle has had an unbroken experience of twenty-five years, first with the refining and then with the production of sugar. When, therefore, we claimed in April (p. 50) that his opinion (unfortunately we spelt the name Rayle) was worthy of careful attention when the question of sugar production in India was under consideration, we had good reasons for making that claim. Having seen sugar refined on this side, and then produced, first, by all classes in India, and secondly, on an up-to-date estate, owned by a keen American firm, thoroughly internationalized in its operations (Messrs. W. R. Grace and Co.), the amount of general knowledge and scientific information pigeon-holed in Mr. Royle's brain must be considerable, especially as the Central Cartavio, Messrs. Grace's factory and estate in Peru, turns out some 45,000 tons of sugar, produced, we are glad to see, by machinery of British make, the factory having been equipped by the Mirrlees Watson Co. with appliances commonly known as offering the last word in sugar machinery.

Starting under the late Mr. J. J. Eastick, at that time chief chemist to Messrs. Abram Lyle and Sons, "Our Friend," having grasped the ordinary laboratory routine, passed on to Messrs. David Martineau and Co., who had just taken over the now historical works (in the sugar world) where "Duncan's Pieces" were made, viz., James Duncan's old factory. This place has always been bewitched or under a cloud or something. Perhaps now that we have a preference for British Colonial sugar, the ghost, jumby, or whatever it is, will disappear. Of course, we all know the end of the Duncan régime, then came the Martineaus, but under them the old place was burnt out and finally closed down, and we heard no more of it until going home in the train one night between 8-9 o'clock whilst the war was on, we saw a vivid light some miles to our right, then signs of an unmitigated explosion, like the finale of a huge Crystal Palace pyrotechnical display, and one man in the train said: "That looks like Brunner Mond's place. You know, it was Duncan's factory in the old day." Whether this is correct or not we cannot say; we all know now how the Brunner Mond factory at Silvertown was the scene of a great disaster, but whether the explosion included the site of the old sugar factory we are not sure. If it did, the explosion was enough even to lay a ghost.

From the Martineau factory Mr. Royle passed to Messrs. Fowler Bros., then to the Glebe Refining Company, and when the manager of the latter concern went to India, "Our Friend" went with him, and there he remained for a round dozen of years with, what finally became, the East India Distilleries and Sugar Factories, and it was whilst with them that Mr. Royle worked for Sir George Watt, and also for Sir (then Mr.) Alfred Chatterton (now a Director on Messrs. Tata's £5,000,000 sugar-refining scheme), Dr. Barber, &c., including those years in which he had charge of the factory and distillery as chief chemist. During this time Mr. Royle also made a careful investigation into the palmyra sugar industry.

In 1911, "Our Friend" left India for Peru as chemist to the Cartavio Sugar Co. and the Central Cartavio, where he is still engaged. Here he inaugurated their present system of technical and chemical control in force over there, when the new factory was erected in 1914 and fitted, as already stated, by the Mirrlees Watson Co. It is pretty well known and widely recognized that when Peru sets forth to produce sugar on a big scale its field work leaves but scant room for criticism. This, we have heard, is especially so with the Central Cartavio, both in its factory as well as out in the fields.

Glancing over Peru generally as a cane-sugar producer, with its present crop of 300,000 tons, against 100,000 (more or less) from British Guiana, and 200.000 tons perhaps from the other British West Indies, that is, between them, the same output as Peru now boasts of, one cannot help wondering how these competing centres, Peru on the one hand, and British Guiana and the W.I. islands on the other, will compare as regards outputs and also as regards the methods employed—in the factory, in the laboratory and in the fields—to secure those outputs in ten, twenty and fifty years' time. Will the islands retire from the competition or irrigate and go ahead?

Business Notices.

1.—The address of Tropical Life is Messrs. Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.

2.—**All literary communications** should be addressed **to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

3.—**All business communications and payments**, either for subscriptions or advertisements, should be sent **to the Publishers** of Tropical Life. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

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7.—Advertisers are only entitled to three changes of matter in the year of twelve issues, unless (1) they send electros for insertion, or (2) are willing to pay for the cost of setting up the advertisement. Owing to present high cost of composition and printing work we cannot depart from this rule.

8.—Changes of address should be promptly notified.

9.—Non-receipt of copies of the Journal should be notified to the Publishers.

10.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

October, 1920.

The Rubber Slump.

Check the Flow of Fresh Supplies before you are Snowed Under.

All must agree that the price of rubber has fallen to an appallingly low level; where we are not unanimous is over possible remedies to enable the patient to recover its strength and "vim" again. When, however, one searches carefully for the cause of the débâcle instead of the triumph we all hoped for, the reason or reasons for the trouble must surely be beyond dispute.

Surely the main cause is due to greed—greed on the part of some producers short-sighted enough to refuse to throw in their lot with the common good, and to restrict their output for some months until it does not exceed the quantity required by the various consuming centres, in the same way that modern Greece was clever enough to restrict the output of currants on the market and so save that industry from disaster. Then there is the greed of the buyers, mostly, if not we believe entirely, non-British firms, who seem to have acted on the racing man's principle of tossing, by saying (to-day, but not when making their contracts), "Heads, I win if the boom comes; Tails, you will lose if it does'nt." The boom did not come, and the sellers are left with the rubber—but why?—are none of these "honest buyers" good for the courts, or are there so many . . . well, never mind, that is for the rubber sellers to decide? "Leave Mincing Lane alone," one man told us when discussing the situation, "it has got an attack of financial measles, contracted entirely from outside; no one can cure the trouble but those on the spot; if the papers will only hold their tongues or speak nothing but the truth, the measles will soon pass. If they don't the disease may spread, and if it does—well let's hope the papers get a taste of it."

One hears a good deal of a certain 100,000 tons of rubber purchased by New York, which seems quite unswallowable by anyone over there, whale-like as the American mouth appears to be. But apparently New York, wishing to have the mouth of a whale, forgot that it had also to put up with its comparatively small swallow, and hence the trouble. Those hundred thousand tons went into the mouth all right but not through the swallow—and so, if anyone wants a little parcel they will know where to go for it.

If America, however, cannot swallow what she has bitten off, what of Europe and ourselves? We certainly do not need the stuff; we have more of our own than we stand in need of, and plenty more where that came from. Again, our stock in London is put down at 37,000 tons, and that of Liverpool at 550 tons, but is this all? Would not those eastern folks, who will not join the ring and agree to restrict outputs, be wise to ascertain exactly what rubber is in the United Kingdom, and what contracts have still to be taken up and the rubber removed permanently from off the market? Would it not be wise of them to try seriously to realize the total quantity of undigested (and, *pro tem.*, perfectly undigestible) rubber that is about and must be reckoned with, before they insist on piling up further supplies and pulling down prices to a needless extent as is now being done? We have not reached finality yet with regard to "dud" buyers, we cannot yet see daylight ahead in the wood of troubles that outside markets have put us in, and since this is so, would it not be better to cry halt for a little so as to give holders a chance to sell what they have, when and where they can, without further flooding the market to the point of drowning everyone or of breaking their backs with still heavier loads? You have in rubber the one crop on earth that need not be gathered, therefore why persist in gathering it? In persisting, you are not acting with as much thought as the natives in West Africa who never send all their cocoa to market—they know it would not pay to do so. The trees probably benefit if the latex, i.e., the rubber, is left there. Will anyone on this earth benefit if it is extracted in the reckless, haphazard manner in which many seem to want to go on gathering it and sending it to market, whether wanted or not. We are quite sure that no one will benefit but that everyone will suffer still further if such a policy continues. Why therefore harm yourselves (and others) when with less trouble to mind and body you can all work together and help the world first to run off the accumulations we have got; and then, but not until then, can you

all—*pro rata*, and still working together—turn the tap of supplies on once more and, in the end, benefit yourselves. Do otherwise, i.e., go on doing as some seem determined shall be done, and see if far more harm does not befall you in the end than discomfort for the time being. The discomfort can surely be borne, the disaster that unrestricted supplies are calling for is certain to be beyond everyone's control. Why therefore invite it to come?

The Cultivation of Rice.—No. XII.

Notes from British Guiana.

(*Continued from the August* 1919 *issue, p.* 124.)

Although somewhat ancient as to date, having been published in April, 1910, the following particulars as to rice cultivation in British Guiana still hold good, especially as they have been brought up to date in a recent issue of the *Journal* of the Board of Agriculture in British Guiana. Probably it was their December number, but in any case the notes just to hand are on pp. 234-250. As the colony has been planting rice since 1750, and now has nearly 80,000 acres under the crop (65,000 in 1917), the most sceptical must own that the experience on which the notes are based are both widespread and long-dated. Last month, p. 135, it may be remembered, we gave up-to-date figures concerning the colony's output and exports.

The land is both drained and irrigated by means of dams and sluices, but that we do not propose to discuss. The land most liked is a clay loam with an almost impervious subsoil. This we believe can truly be described as ideal for rice growing since the water keeps where it is wanted and can be relied upon to go off when it is asked to do so.

As Prof. King tell us to do in "Farmers of Forty Centuries," land for rice should be carefully forked or ploughed four to five weeks before the crop is planted. This forking or ploughing should not be deeper than about six inches or otherwise the subsoil may be turned to the surface and the crop reduced. You may also cut through the subsoil and so lose your irrigation water; at any rate you would not have as good a control over it as when the subsoil was untouched. Whilst attention is being devoted to the land for planting out, the seedlings are coming along in the nursery, which when prepared for sowing should be flooded as soon as possible after being forked and levelled ready for the seed. For four weeks the seed is left to grow, during which period, as just stated, its next habitat is being got ready.

The section in the Guiana notes that interests us the most is the one dealing with the selection of seed and of the most suitable variety to plant. Here we have much useful advice, or aids-to-help which can assist us to come to a decision with lands, as up the Amazon, that are similar to those in British Guiana. The varieties tried include both creole, hybrid and imported kinds, the latter from India, from the Federated Malay States, Surinam and the U.S.A. Their comparative yields are given but it is not stated to what area, nor what measure, bushels or bags. All we are told is that the bags = 140 lb. each.

The following hints are worth noting. Unless great care is taken in the selection of seed, a rapid deteriora tion in quality may take place.

The grower should always use the best possibl seed for planting; it should be clean, uniform, and th grains well filled.

Uniformity in rice is not only for the grower to hav an attractive sample for sale; in the mill uniform rice can be worked more cheaply and with mor remunerative results to the miller. All this mean better competition and prices for the producer.

One of the most promising signs of progress in th rice-production industry will be when growers obtai their seed-paddy from others who make a specialit of growing rice for the seed only.

Selected seed, carefully chosen for the area to b planted, will give larger crops, more uniform in type without increased expense.

Good grain is white, smooth, not sticky, free fron dents and creases. It should be long in comparison to its width and as thick (therefore as wide) a possible. It should be clear, almost transparent not cloudy.

The best way to select seed for planting is to g into the field just before reaping and look for healthy plants. Collect heads which are as much like eac other as possible and choose these from early maturing plants. Never pick unripe heads. Heads containing red grain should at once be rejected. It is best t collect more heads than will be considered enough for next year's sowing.

Take care that you choose the right time for sowing Attempts, it seems, have recently been made to sow rice all the year round, with the result that many o their crops have not paid for the labour expended upon them. *Low returns*, says the British Guiana *Journal*, putting the words in italics, *are largely the result of planting at the wrong time of the year.* It would, in the face of this, be interesting to know, year by year, centre by centre, how much rice in these days when all the world is short of food, is practically being thrown away by not planting the crop at the correct period of the year, especially as, to add to other troubles, it must be recognized that rice cannot properly ripen or be satisfactorily gathered in wet weather. For this reason alone, planting should be carried out so that ripening takes place in the dry season.

Much discussion has arisen in the past, and probably will always be raised until one uniform method is adopted or introduced for sowing seed, as to the quantity needed per acre. About eight or ten gallons is spoken of as being required and the sowings should be successive, i.e., sown in just sufficient quantities as there is labour for transplanting. Thus we are told: If a man intends to cultivate eight acres of rice, he will need eighty gallons of paddy sown in four lots of twenty gallons each, week by week.

This is the most economical method of distributing the work, as when carried out the seedling rice is ready for transplanting from the nursery in four weeks from the time of sowing and should be transplanted before it is six week old. This is because after six weeks the plants commence to joint at the base and if then used for transplanting they remain stunted, do not fill and consequently give unsatisfactory

returns. To sow larger quantities of seed at any one time therefore than can be easily be handled, would be a waste of time, trouble, money and rice.

(*To be continued.*)

Evil Results of not Supporting British Industries.

Chicago Complains of Rotten Tea Chests—Not Made Within the Empire.

Ceylon tea planters have been digesting "a very bitter complaint" (their own words) from the J. C. Whitney Company in Chicago, concerning the present extremely high costs on tea in London, and the poor results obtained in spite of these heavy charges. "Unless," they write, "something can be done with the estate owners to force them to use better wood for their tea chests, or to strengthen their packages in some way . . . we simply cannot go on buying London teas packed in such very poor shape. . . . We certainly have the right to refuse to buy any tea which is so badly packed that the steamship company absolutely refuse clean bills of lading to cover the shipments."

How often have we urged planters not to use rough-sawn boxes, with sawdust knocking around for rubber packing, and inquired whether it did not pay in the end, even if it does not always seem the cheapest at the beginning, to have strongly made, metal-bound tea chests, that do not tend to vanish into thin air if sent to Australia, or to be fit only for firewood if sent to America.

These Japanese and foreign wood chests have had their day. The war and lack of transport no doubt resuscitated the demand for them, but now things have settled down tea planters will be wise to get back to their British-made chests again. Probably they are already doing so, for we saw the other day that Russia was sending larger quantities of tea chests to China and Japan less. Probably the Russian chests are made by British firms, for Messrs. Venesta told us quite recently that the production of their well-known chests begins to improve, so that this year they hope to deliver about 800,000. Although this is probably but 50 per cent. of what they supplied in 1913, it shows a satisfactory increase over more recent years, all things considered. If the costs are still high compared with native-made boxes, or even with the Japanese momi chests, the ultimate saving in such complaints and claims as those from Chicago, as well as in freight and warehouse charges, which are now so very much higher than before the war, makes the future use of the improved chests far more likely to increase as time goes on, and the complaints and loss over using other makes are shown up in sharper relief and so become more and more apparent.

"The J. C. Whitney Company ought to be complimented for having drawn attention to the scandal of sending tea on such a long journey in unseaworthy receptacles," said another firm; whilst our friends Luralda, Ltd., have no sympathy for Ceylon and her planters, some of whom, it seems, have been great sinners in this matter of paying too little attention to the poor chances of the tea chests used ever reaching the end of their journeys in a satisfactory condition.

And so, out of trouble will come good, especially to Ceylon we are sure, for the Ceylon tea planter was ever a wise man.

Our (held-up) Book on Tobacco Planting.

Under the heading of "Neglected Industries," the *Queensland Agricultural Journal* for July, devotes pp. 12 *et seq.* to a very good account of how to plant tobacco and make it pay. "Among the agricultural products in Queensland, that of tobacco may be said to rank among our neglected industries," writes the *Q.A.J.*, and yet "the yield in some of our districts during exceptionally good seasons amounted to £40 per acre (half-ton up to £80 a ton)." We quite agree with this view and believe it to be correct. One cannot help feeling that British-grown tobacco for British factories could be and should be quite as keen an Imperial war-cry as British-grown sugar and cotton. Why isn't it? Meanwhile the high price of paper and cost of printing and publishing still renders it inadvisable to issue our book on tobacco planting, for the demand for such a work must of a necessity be limited, and no industry is less profitable from an advertising point of view than that connected with the cultivation and production of tobacco within the Empire.

We have always liked brown sugar; we like it better than ever now we have seen Lady (Arthur) Lever's most amusing comedy bearing that name, only spelt with capital letters. We had heard so much of Miss Edna Best's part in it that we were obliged to see if it was as good as reported; it certainly was in every way. She is such a brick right through, and everyone in the cast backs her up splendidly, for the mannerisms of the whites (always the aristocratics, whether in Russia, in the Tropics, or in the sugar world) are not overdone. One would have liked to smack Lady Honoria at times, she was such a "cat," and a young one too; but then they are always so much more "catty," especially when they lose their males. Perhaps you cannot blame them. By now the play has been transferred to the Garrick Theatre. Well—here's luck to it in the new home, it deserves to have a good time.

All the same, when you go to see "Brown Sugar," as of course you will if in London, when it comes to the competition over the best leg for a boot, do let us know if you consider that Lady Honoria really deserved to be called "match-sticks." We fancy it was a libel, but as she did not compete, we cannot say for certain which of the two would have won. We believe—but never mind what we believe. It is for those still to see the play who must say what they think.

Tahitan Bamboos for Paper-making.

Referring to what we had to say in our July issue (p. 120) on "How to Destroy Bamboos," the *Financial News* of August 7th, in commenting on the matter,

told its readers: "We wonder if the President of the Chamber of Agriculture of the French island of Tahiti has considered the alternative of turning this so-called plague of bamboos to commercial advantage. Experiments are now being conducted in Burma in the conversion of bamboo into pulp for the purpose of paper-making, and some considerable success has been attained. Mr. Raitt, the Indian Government cellulose expert, reports that there is sufficient bamboo in Burma to produce 14,000,000 tons of dry pulp per annum. This pulp has many features in common with esparto, and can be used for all grades of paper. It is estimated that the undertaking will be a financial success, as the cost of production is approximately one-half that of the present cost of wood pulp. There is plenty of scope for commercial enterprise in Tahiti, and the French agricultural officials are always willing to consider new schemes for industrial development. The principal exports of the island are at present coco-nut fibre and various fruits, and although the natives are indolent, labour can be obtained with comparative ease. In view of the present acute world shortage of paper supplies, the development of a new source of supply would be welcomed, and the commercial exploitation of bamboo in Tahiti is a project worthy of serious consideration."

According to the *Daily Express* of London, the present price of paper is not warranted; the discrepancy between the manufacturing and the selling price being too great. The tremendous rise in value (causing the mere cost of the paper alone in many dailies to exceed the selling price) is attributable to the enormous demand, strengthened by the repeated statements which have been made that the wood resources from which paper is made would soon be exhausted. Such a statement, however, they claim, is quite untrue. The timber areas of Canada alone are so vast that they can feed the world-hunger for an indefinite period; and then there is Newfoundland and elsewhere waiting to be utilized, to say nothing of those huge areas in most countries, including the U.K., where re-afforestation could be carried on with such benefit.

The monthly journal for July of the British Chamber of Commerce, Sao Paulo, included an interesting three-paged account (translated from an article in Portuguese) of the cultivation of (China) tea in Sao Paulo State, where it was known as *chà*. The actual date when this industry first started over there seems uncertain, but we are reminded that about 1824 it was a flourishing industry, also that Sir Joseph Banks in India discussed tea plantations before the date of the great French Revolution. It can also be noted that India had started to export tea whilst Sao Paulo was still a producer, and Ceylon probably had some tea planted before Sao Paulo gave it up for coffee, which probably took place about the same time that Ceylon did the reverse and gave up coffee for tea. In the article referred to in our Sao Paulo contemporary it is claimed that this State was producing tea around 1824 as advantageously as it was being cultivated in China.

Trade, Politics and Finance.

Our old friend and contemporary, the *Louisiana Planter*, advises us that they have removed their office from Carondelet Street to 424, Camp Street, New Orleans. This will join up all departments under one address. May the same success attend them in the new building as in the old. The same to Messrs. C. Leary and Co., the well-known timber brokers of London, Liverpool and elsewhere, whose London address is now 85, Gracechurch Street, E.C.3.

Meanwhile there is a tendency for a reaction against the needlessly high retail prices to set in. The public are fully aware that many and perhaps all the manufacturers have big stocks at top prices still on hand, but feel that they (the public) have been made to pay their share of the indemnity against too heavy or too sudden a drop and so decline to continue. It is now openly claimed that the cost of wool and sugar are only being kept up, at the cost of the public, to a needless extent, for there has been a bad crack in prices. The price of boots has been broken, those manufacturers who are foolish enough and selfish enough to hold up their stocks rather than meet the fair public demand have missed their chance to liquidate their loss, and when they do "plump" their stocks on the market, it will only be to find that it is a low one, with but little export demand, and that their stocks which have been held up will give the finishing touch, and then let us hope the public will once more start to buy at reasonable values and not at rates that have been well described as legalized thieving.

Even bread could be cheaper than it is, instead of going to 1s. 6d. the quartern loaf, which some foretell. Perhaps the Indian Government's decision to permit the export of 400,000 tons of wheat will help to pull down the price. It certainly ought to. The estimated yield of wheat in India works out at over 10,000,000 tons, of which rather more than 1,600,000 tons should be available for export. Tea, cacao and coffee producers should also study the protests made in papers against charges still in force, and even recently increased, for cups of tea, coffee and chocolate to drink, by a firm paying over 40 per cent. dividend. In these days of strikes it is a pity that such firms cannot be boycotted, and so unable to obtain supplies of raw materials which at present they make up and sell to the public at such rates as to discourage the consumption of these three products, now selling so low in price, and often troublesome to sell at all, whereas if placed before the consumers at popular prices the demand would be stimulated on all sides.

Increased demand not only means a reduction in the present accumulations of valuable foodstuffs now being held up for want of buyers, but also means more employment all round to satisfy that demand. At the moment, the outlook is very gloomy, and many hands are likely to be unemployed in most of the trades just when the cost of living is so high, and yet the world is crying out for the goods. Cotton goods could be produced by the ship-load and still be absorbed without noticing the quantities purchased, and so with woollens, boots and foodstuffs. Attention given to mere—but mighty necessary—creature com-

forts alone would encourage larger outputs in machinery, coal, &c., to make the food, &c., with, and then, and not before then, will trade start moving. It is the little kinks that keep the wheels locked, the greater the pity it is so; but, at the same time, the now established coal strike is no kink but a huge boulder rolled across the lines of progress.

We agree with the opening words of Messrs. C. Leary and Co.'s London Market Report for September, when it says: "Although it cannot be said that the depressed condition of business—which has now lasted since the early summer—has come to an end, there is, beneath the still quiet surface, an undercurrent of demand for wood, which tends to show that were it not for the threat of serious labour troubles, the expected autumn revival in trade would already have begun. If a miners' strike is not avoided, this improvement will certainly be considerably postponed and the effects of the strike may be so serious that the improvement may be stifled at birth. Auction sales, though still unsatisfactory as regards some descriptions, have shown marked improvement for others, while in other branches of the trade in which the business is mostly by private treaty, a certain amount of progress has been made at firmer prices with the disposal of stock. The improvement has been gradual, and if no further interference takes place, we think it will prove that we have seen the worst of the market in most descriptions of hard woods." Of course since then the miners decided to strike and came out on October 16th.

The Colonial Bank continues to go ahead. In the old days, rude critics claimed that there was grit in the machinery that checked progress and so was causing this old-established concern to be left behind. Their last meeting showed, however, that the grit has been shifted to the proper place, namely, into the energies of the directors and, staffs, who, having brought the bank up to date in every way, are ready to back her against all comers. They will win too, of that we are sure, for the policy is all for skilful driving, not showy "stunts," and as one of the shareholders claimed, the six or twelve months to come will not be all clear sailing, so skilful steering will be needed. Banks, unlike certain well-known international yacht-racers, cannot keep in port when squalls of finance and competition blow outside; they are bound to keep out in the open and do their best to avoid the squalls. From what we know of the shareholders of the Colonial Bank, they will, on this account, be as ready to support and encourage the staffs if trouble does come, and as keen to watch them overcome or avoid the difficulties, as they will be to gather in the dividends that the tactics of these staffs have secured for them, when the racing is over.

It is a matter of regret to hear that Mr. G. A. Talbot, M.P., the ex-Ceylon planter, has joined the great majority. A useful man, with a useful career behind him in which he has gained much experience, made us hope to have seen Mr. Talbot in the House of Commons for some years more.

Coming now to market reports, sugar is still much above the popular idea of fair values, especially when one hears so much of the troubles of Cuba that dreams of sugar at 3d. per lb. seem to flit across the brain. Possibly cheap sugars are like cheap sales, the only thing low in the deal is the quality, the prices are only put higher. In the free market, British West Indian Crystallized has been selling at 99s. to 101s. and Muscovado at 69s. to 75s., against 110s. for White Mauritius. Retail, the holders are trying to sell brown sugar at 9d. lb. and crystallized at 1s., but the public are not keen buyers, a little fact which goes to show that they will *not* buy above what is considered a fair price. Until Tate's Cubes or an equally good sugar can be bought anywhere at 6d. lb. retail, it is no use talking of sugar being at a popular price. Even then, of course, it is at least double the pre-war cost to the housewife.

Coffee goes slow, any progress seems to need lower values. Brazil has got over the frost, and her receipts are heavy, say, 4,262,000 bags to date, against 2,729,000 last crop, 3,297,000 in 1917-18, and 5,399,000 in 1916-17. Of British growths, Coorg has been selling from 100s. to 105s. for middling, and 109s. to 112s. for bold. Nairobi went up to 105s. to 110s. 6d. for greyish, 116s. 6d. for peaberry, and down to 75s. for rough and ordinary. Common bold greyish Uganda fetched 77s. 6d. to 78s., peaberry 79s.

Cotton is down, fine Egyptian especially. Middling American ranges from 15d. to 12d., according to delivery, but so long as the retail prices remain so outrageously high and the quality of the material offered is so poor, no one is benefiting but the spinners. Shellac is at 650s. for T.N. and 550s. for A.G. Manila hemp is about £67 10s. New Zealand £55 to £56, whilst sales of Sisal from East Africa have been made at £42 to £56 10s. according to quality.

Tin is around £244 cash spot, but much higher prices, up to £271, are mentioned for future delivery. Copper tends lower, on the other hand, say £88 10s. against £93 now.

The following is a comparison of the principal points in the returns of the Bank of England at the present time compared with the corresponding week last year:—

October 16th.	1920	1919
Bank Bullion ...	£123.154,414	£88,082,372
Reserve of Notes ...	12,998,065	20,991,220
Private Securities ...	81,675,848	82,602,331
Notes in Circulation ...	127,123,340	83,705,095
Rate of Discount ...	7 per cent.	5 per cent.
Price of 2½% Consols ...	45⅜	52¼
Price of Bar Silver ..	53 5/8d.	63¾d.

The London Cocoa Market.

By the Editor.

I have had a most strenuous month in connection with every crop but cocoa, the market of which started by being extremely dull and not worthy of attention and so got side-tracked for a time. Now that there has been more doing, especially with Trinidads, I do not find it too easy to leave long-stapled cottons, vegetable-oils, &c., behind and become absorbed in cocoa chatter instead. All the same I will have a try.

I am starting these notes before the Board of Trade figures have made their appearance, so am rather tied up, but for all that there is a good deal to talk about—still more to ponder over, but on which you dare not venture an opinion in print.

The chocolate trade—on paper—is up in arms against the price of sugar, and this is not to be wondered at. Of course, the import duty on granulated is about 25s., and freights across are heavy, but our present price to manufacturers of 116s. is not a fair one against current prices for "raws" or of white granulated in Java. With the slump in demand for tropical produce, it must be irksome to producers therefore to see needlessly high prices (and we all know that they need not be so high), as the demand cannot expand for cocoa as it would do were the cost of sugar to be on a lower basis.

This is the trouble in the U.K., but what of the Continent? There they still have the high exchanges like an old man of the sea around their necks. What a demand there would be were it not for this. As it is even Holland and Germany must be buying, for considerable sales lately have taken place in Trinidads at 78s. and 80s., some thousands of bags being sold against only a few hundreds of Grenadas at rates which leave that growth at only 76s. for the best marks. The home trade, however, alone take a little of this growth, whilst exporters have taken the Trinidads. Pull down the price of sugar to more of a parity with the much-talked-of 9 cts. to 10 cts. for Cuban raws, and then one can look for Grenadas to sell as freely as Trinidads have been doing.

It is just as well to remind buyers and others who are prone to say that the West Indies still receive "jolly good prices for their cocoa," that 80s. is not much of a price, and 78s. is still less in these days of high costs and low values for the sovereign or the "Bradbury-turned-Fisher" note. Whilst the miner and working man strikes for three and four times pre-war wages because of the high costs of living (incidentally raising the cost of production and transport to the cocoa planter by doing so), no one seems willing to continue to pay the planters anywhere even twice the pre-war rate for their beans, much less three and four times as much; all that is being done is to try and assure the planter that his present pre-war prices are (when the cocoa sells, which is not always) quite high enough.

I noticed that during August Russia was to receive 116 cwt. of raw cocoa. One wonders if it ever reached Russian territory, what was done with the beans? Against this, Germany had 17,500 cwt., and Holland 25,000 cwt. against 17,000 cwt., which were cleared for America. Russia also received 900 cwt. of cocoa-butter. It is well to look at these driblets and wonder when they will swell into a steady flowing stream. Once the miners can be pacified for good in the U.K. it is expected that whatever happens on the Continent trade in confectionery and chocolate will boom over here. Let us hope such a settlement can be arranged. Meanwhile when one reads of how work has dropped away from industries of which rubber is the chief raw material, it must be owned that the cocoa trade has nothing to grumble at in that way; but of course retail sales will shrink if the public have to go on short pay.

A growth about which little if any reliable information as to value can be obtained in London is Bahia. We have no visible stock to talk of (figures are given a little further on), and so no doubt if anyone wants a small parcel, extreme values are asked and paid. Recent falls in the price, however, have brought fair alongside the value of fair fermented Accras, and if fine Accras, as one sees in print, are still being sold up to 67s., superior Bahias can be put at the same figure and no more, only this price for the foreign growth is only c. and f., not landed, as with Accras, and of course if used in the U.K. Bahia cocoa also has to pay 7s. cwt. more duty than Accras. Recently, I believe, even on landed terms, Bahias have come down more on a line with Accras, and so, even with some prejudice plus the difference of the duty, if the new crop of Accra is not up to the mark, manufacturers in the U.K. may be pleased to take superior Bahias against fine or good fair Accras. This is why wise men tell the Accra native to look to his laurels and not take too much for granted. In spite of the 7s. preference in duty, his cocoa may still be pushed aside for the more reliable San Thomé or Bahia in the U.K., whilst in France, of course, there is no preference between the two, and so the best cocoa for the money asked will win. I have heard more than one inquiry lately for Bahias whilst, goodness knows, there are enough Accras here. Here is a little straw, therefore, for the Accra native to keep his eye on and watch where it will lead to. Substantial business must have been done in Accras since I ended my last report. Quite recently I believe the demand has sagged a little, but if Grenadas and other W.I. had been and were still as much sought after as Accras, and latterly as Trinidads, then there would be more confidence as to the future for these smaller island growths.

Of course we all know that in the beyond everything will be alright, one can almost see the boom, in spite of the mountains of obstacles and seas of trouble that lie between us and that delightful country. But the cost of living, of charges, and the rates of exchange, which go to build up the obstacles between ourselves and that which we all want to catch hold of are certain to give us a lean time until we overcome them, and some growths, or rather some of the producers and dealers interested in them, may be harder hit than others both at distributing centres as well as at the sources of production. Knowing this, it will not be waste of time on anyone's part to study reports from all centres and concerning all crops, as to what labour is costing, how it is moving (far too many seem to me gravitating back to India for one thing, and once there, like the children in the "Pied Piper of Hamelin," the door shuts and they are not seen again), and what sacrifices are proving to be necessary to attract fresh supplies or retain those already secured.

If politics and trade union agreements in temperate countries are becoming more and more cosmopolitan and international in their handling, so have the questions of labour supplies and their rates of pay in the tropics. It will be a foolish planter, no matter how far he may seem to be from labour troubles of any sort, who does not make himself realize this fact and so keep *au courant* of what is happening.

West Africa, among other centres, is already taking stock. The large employers of labour over there are summing up the probable labour requirements on the part of the Government for labour to carry out the

transport and harbour improvements that we all trust will be started and completed there as soon as possible. All this will require much labour, but the exact quantity and the date has yet to be ascertained. A writer in the *Confectionery Journal* for October 14th calls attention to all this, and gathers from the prospects a hope that the cocoa industry over there will benefit. Mine-owners, vegetable-oil producers and, one day perhaps, producers of long-staple cotton, will all benefit by these improved methods of transport when at work. He claims: "If a good, long, American-Egyptian variety of cotton can be grown in the hinterland behind Accra and towards Kano and Northern Nigeria, it would also be," he goes on to say, "a happy day for cocoa on the Gold Coast, for the same network of railways that the engineering genius of General Guggisberg is striving for can carry all these crops and more besides, all of which will go to soften the cost of the railway by increasing the revenue. This means that it will ease things for cocoa both as regards transport and when putting the beans on board. A big time is ahead for West Africa; may it come soon, and when it does, may it revolutionize the cocoa industry and give us bigger yields from established areas and do away with the present mania of the native to wander further afield and leave the gardens already established to become a pest spot to spread disease all round."

Still no returns from Bahia. Reports speak of that growth being anxious to sell and even of trying to cut out Accras. For such a thing to be possible lower prices would have to be taken than the 80s. to 85s. we have heard of. Perhaps London may see more of this growth, for we really have no stock at all—1,400 bags all told, including any "undesirables" that must always be there when clearing up to the last bag. The chief point that interests me with Bahia is the probable stock laid up over there. I do not know what proportion of her 1920 exports (441,571 bags, against 573,000 last year, January 1st—September 8th) went to America, but I do know that during the fourteen days ending September 18th, some 26,600 bags went there out of 52,000 shipped. Scandinavia has been having a few thousands at a time, whilst Hamburg had 6,550 bags consigned to her.

The stock of cocoa in London, at any rate to October 9th, was steadily going back, although the weekly reduction has not been large at any time. On October 9th we had 277,934 bags against nearly 307,000 on August 21st. During the week ending October 16th only 1,129 bags were received against 6,000 delivered. This leaves us with a smaller stock again of 273,000 bags, or 34,000 less than the top "notch" mentioned. as under:—

London Stock, October 16th.	1920 Bags	1919 Bags	1918 Bags	1913 Pre-war
Trinidads	44,708	34,288	10,055	12,557
Grenadas	31,165	16,689	7,957	4,071
Other W.I.	21,853	7,952	1,612	4,450
British African ...	25,947	26,391	51,865	7,489
Portuguese African ...	840	13,029	39,639	5,063
Cameroons	1,378	3,093	1,853	3,256
Ceylon and Java ...	21,645	7,132	11,359	15,317
Guayaquil	78,933	9,709	16,083	19,308
Bahia and Brazil ...	1,452	2,486	1,531	3,696
Other foreign	45,143	12,754	7,298	9,463
Totals	273,064	133,523	149,252	84,670

Havre, on the other hand, shows larger and larger accumulations. Her 302,000 bags at the end of June are now over 375,000. Venezuelan, Trinidad, San Domingo, Haiti and other kinds show noticeable increases, whilst Bahias, San Thomé and Accras are now lower than then. Here are the totals:—

Havre's Stock, September 30th.

	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará	7,501	200 to 218	18,684	200 to 207
Bahia	41,702	182 ,, 215	39,232	190 ,, 207
Venezuela ...	32,345	225 ,, 305	18,819	220 ,, 266
Trinidads ...	59,789	212 ,, 215	32,196	220 ,, 225
Grenada & O.W.I.	10	198 ,, 212	5,658	205 ,, 215
San Thomé ...	58,134	170 ,, 215	43,267	180 ,, 210
San Domingo ...	42,275	177 ,, 188	6,174	184 ,, 189
Haiti	38,228	162 ,, 188	20,837	160 ,, 175
Accra ...	49,468	167 ,, 170	109,153	182 ,, 185
Guayaquils ...	14,566	255 ,, 272	88,965	210 ,, 216
Others ...	31,203	—	3,474	—
Totals	...375,221 bags		386,459 bags	

So much for stocks. With regard to production, Guayaquil does not seem troubled. Thanks to the "peste" over there, which Mr. Rover, formerly of the Department of Trinidad, is investigating, they seem to think that their output will not be over heavy, whilst the demand from the United States is said to be very good. (*Haber gran solicitud de las E.E.U.U.*, writes one firm.) It is true we have 80,000 bags against 9,500, but then Havre makes up for this with only 14,500 bags against 89,000 last year. America, I am told, has 170,000 bags, and does not want them all.

The receipts just in show that during the last half of August 30,212 quintales were received against 11,826 last year, and during the first part of September, 14,637 against 13,492 in 1919. This gives us the following totals:—

Guayaquil Receipts— Jan. 1—Sept. 15.	1920. Quintales.	1919. Quintales.
Arriba	470,407	482,849
Balao	83,281	49,209
Machala	9,862	14,681
Total ...	563,550	546,739

I am waiting for the September movements at Lisbon to come in. Those for August show very small imports and deliveries. In July 13,312 bags were received and 2,883 bags delivered. Here is the table for August:—

Lisbon Movements—	Bags.
Stock on July 31st	124,910
Landed in August	6,129
Makes	131,039
Delivered in August	5,226
Leaves stock on August 31st, 1920	125,813
Against ,, ,, 1919	169,892

Now we come to the Board of Trade returns for September, then we talk of prices and conclude. Last month we received 5,230 tons, of which 4,756 came from West Africa. In our deliveries for Home Consumption we are behind (for September only), say, 3,292 tons, against 5,375 in 1919; on the other hand,

we received 12,313 tons of foreign manufactured in the nine months, January-September, or over 1,300 tons a month, and have taken into Home Consumption over 1,000 tons a month, against rather more than 500 tons a month in 1919. One cannot help wondering why all this chocolate comes in from abroad instead of being made here. We certainly do buy more Accras than I care to see, *but* we keep the best, and in any case I am sure our standard of quality in the beans and of care and cleanliness in the factories is above that of our foreign competitors, whose chocolate, whatever the quality, is not cheap. However, I stop at production. The question of manufacture and consumption I leave to others, only noting that as a country we have, during the nine months, January-September, taken 6,170 tons less of raw cocoa into Home Consumption and 5,300 tons more of foreign manufacture. From a producer's point of view, therefore, we are only 800 tons behind so far. Here are our figures for the nine months; note the increases since 1913, the pre-war year:—

Board of Trade Figures—January—September.

	Landed.	Del'd H.C.	Exported.	Stock, Sept. 30th
	Tons.	Tons.	Tons.	Tons.
1913 ...	... 27,603	20,503	5,178	10,650
1918 ...	... 19,016	45,834	584	16,150
1919 ...	...102,112	45,088	11,980	64,600
1920 ...	... 97,035	38,918	30,168	69,350
	Decr. 5,077	Decr. 6,170	Incr. 18,188	Incr. 4,750

At the end of August, it will be remembered, our stock was 74,000 tons, not quite 5,000 tons more.

And now as to prices and prospects. The last reports, just in, confirm what I had been hearing down Mincing Lane, that rather more has been done of late compared with the (almost completely) stagnant state of the market since April. The coal strike now on will not encourage anywhere the slight flip-up now reported to continue, for the export of coal must cease whilst the strike lasts, and so—well it will not encourage manufacture anywhere. The prospects, therefore, are quite uncertain. We have not overbought ourselves like America, so still have some space left, and we are not so handicapped in our currency as the Continent, but still Germany is buying beans and making chocolates, so one must agree that everywhere else ought to go ahead too. The sales now spoken of include (in London) Trinidads at 80s. and 81s.; Grenadas, better to best marks, 74s. to 76s., against 60s. to 63s. for good fermented Accras. Quite a number, some thousands, of Trinidads have been sold during the past month, but not Grenadas; they have only been selling in hundreds for home use, whilst their rivals are wanted for export. Even at these low rates—for they are low against present-day costs, retail prices show no signs of falling in reality, however they may have fallen on paper. The raw material is lower no doubt, but the household bills—the acid-test of the still more acid householder—so far as tradesmen are concerned, shows not only no signs of a fall, but a tendency to go higher with bread at 1s. 4d. and milk up again. All this tells against the consumption of cocoa in any form.

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Next Year's (1921) Exhibition and Congress.

ACCORDING to the latest news to hand, Mr. E. W. S. Ventress, A.M.I.M.E., who, after about a nine years' spell in Japan in connection with vegetable oil refining and its manufacture for commercial purposes, is now studying vegetable oils up the Amazon, will contribute a paper, we hope in person, to the Congress on "The Amazon and its Vegetable Oils." Mr. Felix Camps, of San Domingo, will, we believe, have something to tell us about cacao in San Domingo.

Portugal, who came in somewhat late, has made up for its delay by booking a large—one man called it a stupendous—space, approaching 10,000 square feet, and those interested in securing this space are now busily engaged in filling it to best advantage. A most interesting and instructive exhibit could be brought together by this country—we trust that, knowing this, they will give us of their best. One model especially we should like to see either on a map, or, better still, on a floor or table space, would be a plan showing the extent to which portable railways have been laid down and utilized on the big cacao estates over there, and how the lines run. This country is very slow at realizing how time and money can be saved in the end by having portable and light railway lines laid down, costly as they may be at the start.

Since this is so, then Portugal with its cacao, balata (if not rubber), cotton and vegetable oils, should also play an important part in the Congress. We fancy they will, especially as M. Emile Alleaume who, although a Havre man, is attached to the Portuguese Trade Corporation, is one of the vice-chairmen of the Congress, and our old friend Señor Francisco Mantero has joined the advisory council with a number of other leading men in Portugal.

Another Portuguese-speaking country which has taken a large space is Brazil. Their area covers some 5,000 feet, and Mr. de Vasconcellos and others in Brazil and elsewhere are busy arranging to fill that space to best advantage; we hope that cacao will come in for a proportionate share. It must be remembered that Bahia is not the only State in Brazil which produces cacao, although its present output—800,000 bags—would alone entitle this article to at least one thousand feet.

Considerable areas along the Amazon produce cacao, generally known as Para cacao, which has been included in the previous exhibitions. Perhaps the concluding paragraph in a letter just to hand from Messrs. F. Stevenson & Co., Ltd., of Bahia, regarding the Exhibition and Congress, can be included here with advantage. They wrote on October 5th as follows: "Much greater care is now being bestowed in the fermentation and drying of our cacao. The resultant increase in the output of the better grades may be the salvation of the Bahia planters

in fighting the ever increasing competition from other centres. . . . We note what you write about next year's exhibition and Congress and are asking our Ilheus house to send good samples of the three grades of beans, Fair, Good Fair and Superior—also washed Superior from our own estates, and will send same on to you. We wish the exhibition all success, but unless the manufacturers in England can pay the same price for Bahias as other countries do our produce will continue to go elsewhere. The exporter in Bahia is not prepared to pay the duty levied by the British Government on foreign cocoa merely for the pleasure of shipping to the U.K."

WANT of space has forced us, most reluctantly, to hold up our Coffee Notes.

The Cultivation of Rice.—No. XIII.

LABOUR AND FOOD SUPPLIES—A SERIOUS PROBLEM IN BRITISH MALAYA WHICH IS A SURE AND INEXHAUSTIBLE CUSTOMER FOR GROWERS.

(*Continued from October issue, p.* 155.)

LIKE other portions of the world, British Malaya, for the past few years, has been suffering from a shortage of food supplies. The position in the Federated Malay States has its own peculiar difficulties, which are of peculiar interest to rice producers in Malaya or at other centres able to supply the F.M.S. with rice, since a large proportion of the population consists of alien, non-food producing labourers brought in to work on the rubber estates or in the tin mines. British capital is largely invested in these industries, consequently there are many investors in this country who are asking what action is being taken to feed the working population of Malaya so as to enable the Colony to maintain the vigour of their labour force on which the prosperity of the tin and rubber industries so closely depends.

Now rice or padi is the staple food of the Asiatic labourers, and hitherto Malaya has had to rely upon outside sources for its supplies, notwithstanding all that has been done by the F.M.S. Government in the past, by means of extensive irrigation works and other means, to stimulate local production. Economic influences have operated to prevent the local cultivation of foodstuffs from keeping pace with the increase of population. There being no unemployed labour to grapple with the present emergency, and an altogether inadequate supply of food-producers compared with numerous "armies" of food-consumers, the administration has had to step in and to use every possible means compatible with justice and sound economy to foster and encourage the production of rice and of such other foodstuffs, more especially cereals and leguminous crops, as can be grown successfully in Malaya and are acceptable to and suitable for those having to be fed.

Enactments were brought into force last year under which estate and mine owners were called upon to make provision for feeding their employees. In the case of agricultural lands of thirty or more acres in extent, three per cent. of the cultivated area, or one acre for every ten labourers employed, whichever should be the greatest, must be planted with ragi, padi or sweet potatoes. Similarly, owners or managers of mining lands were required to plant one acre with foodstuff for every ten labourers employed, or five per cent. of their land, with the same products, and from published reports it seems that the planters and mine-owners have done all that and more than was demanded of them. We say this because according to tabular statements attached to a very full report on the subject by Mr. M. S. Hose, Director of Food Production, F.M.S., we learn that there were 219,141 labourers employed on estates in 1919 and 59,609 in mines, making 278,750 in all. But whereas only 31,470 acres were required to be cultivated with foodstuffs, actually 45,519 acres were cultivated by planters and miners, and in addition 1,550 acres were placed under cultivation by the labour of public departments. From various exceptional causes, 3,050 acres failed; but, on the whole, the result was an important and welcome addition to the food supplies of the Federated Malay States. It is estimated that 170,000 acres of rice were cultivated by Malays; but this is not nearly enough, and Mr. Hose states that an immense additional area (probably not less than 450,000 acres) is required to be planted with padi if the Federated Malay States are to become independent of outside supplies of rice. Knowing of this was what caused us to start these articles on rice production, so as to enable our readers to see at a glance what can be done and what should be done at each centre to assure supplies.

Legislation is already in force requiring a certain amount of wet rice cultivation by the indigenous Malay population. This requirement (which is directed chiefly to protect the rice-growing community from the consequences of neglect on the part of individual members of the community) is readily accepted by the Malays as being for the benefit of all and is in accordance with immemorial custom; but Mr. Hose does not think the administration can, either equitably or profitably, go further than this in requiring Malays or any other section of the community to cultivate rice and other foodstuffs, except as a temporary measure when the country is faced with the imminent threat of shortage of essential food supplies.

Compulsion being ruled out as a normal means of increasing rice or other food crops, Mr. Hose has submitted, as an alternative, the following recommendations under three heads, i.e., (1) Improvement of existing rice fields; (2) Increasing the area under rice; (3) Encouraging the cultivation of other cereals and of pulses, either as a sole crop or in rotation.

Under the first head, he discusses the provision of improved irrigation works; the selection and distribution of suitable heavy-yielding varieties of seeds; the establishment of demonstration plots in rice-growing districts, with Malay padi inspectors, trained under the Department of Agriculture, to supervise cultivation and give advice; together with the institution of Government rice mills and the concomitant purchase of rice from cultivators, so that the padi planter would get a sure market and better price for

his produce than he can hope to obtain when a middleman and a burden of debt at usurious rates stand between him and the mill. This latter proposal is of the utmost importance. No man can be in two places at once, i.e., he cannot attend to his rice fields and to the marketing of his rice, and so at present he does neither task properly and soon gets into trouble and debt. This is what is doing inestimable harm to sugar production in India and will do equal harm to rice and food production in Malaya if not guarded against.

To increase the area under rice, Mr. Hose suggests that the administration should proceed without delay with such irrigation works as will open up such additional areas for the development of which there is a resident population ready to hand. In these cases the land should be granted on easy terms, without the burden of water rate, but subject to strict cultivation clauses. He also suggests that carefully selected labourers, with a knowledge of padi planting, should be employed on these new irrigation works and granted land on easy terms when the works are completed, so that their successful efforts can be an inducement to be followed by others. As a further way of extending the rice area, an experiment might well be undertaken on a sufficiently large scale to be of commercial value in the cultivation of rice without irrigation on flat land by means of tractors and labour-saving machinery. As it is probably too much to expect, in the present economic condition of Malaya, that such an experiment should be undertaken in the first instance by private enterprise, he recommends that from 300 to 500 acres be cultivated by the authorities in this way in conjunction with a recently approved scheme for a Government stock-breeding farm.

As regards the cultivation of crops other than rice, the present crisis has disclosed the fact that several other cereals and a considerable proportion of the pulses, commonly imported from India, are capable of cultivation in Malay. Ragi (millet) is the cereal that has met with the greatest success. This grain is very acceptable as a food amongst Tamils; it thrives in a considerable variety of soil conditions, provided that wet weather is assured for the planting and early growing periods, and it has the advantage of very rapid maturation compared with most kinds of padi. Other kinds of Indian millets have been proved to grow well and give good yields.

Mr. Hose's report, of which the above is a brief summary, goes into many details with regard to the food supply of the Federated Malay States and conditions that are prevalent in the whole of the Malay Peninsula. It is now in the hands of the administration, and it is highly probable that action will be taken to carry out some of the recommendations put forward as the result of Mr. Hose's investigations. We hope that thoughtful and influential men in India, the West Indies and elsewhere will secure copies of this report and, in studying it, see what others are doing to increase food supplies and where their own methods are better, or less suitable for the food-crops and centres with which they are connected.

(To be continued.)

The Sugar World.

The 1921 (London) Tropical Exhibition and Sugar.

"Our attention has recently been called to the great change which has occurred in the last two or three decades in sugar manufacture and in sugar factory ethics." wrote the *Louisiana Planter* on June 5th, p. 355.

We agree with this remark and only wish that some means could be found at the coming Tropical (in conjunction with the Rubber) Exhibition in London next June, to induce the leading sugar engineers in the U.K. to show by means of models and drawings the tremendous progress that our leading makers of sugar machinery and factory appliances can prove that they have made during this century, to go no further back.

Such a series of models would interest the public, could be easily transported, and would not cost much as they could be used elsewhere as well. On the top of all, no useful secrets need be given away with a model, and this is not always easy to avoid with a full-size machine. The educational value of such models would be considerable, especially for those about to go abroad to take up sugar estate work. There is so much to learn in a factory in these days, whether in the tropics, the East End of London or elsewhere, and again quoting the *Louisiana Planter*, "Every man on every station in a sugar factory ought to know why he does the work he performs." Intelligent labour is essential in these days. America knows it, and has acted in accordance, let us do all we can to encourage those who could help in the tropics to become interested in English machinery next June, along the lines proposed. Very soon sugar prices will have dropped to a competitive level, and then the estate with the most practical machinery will win. This country still holds its own in this way, but has never done anything to let the world know. As a result, more people than we care to think about have the foolish idea that because Cuba dominates the world as a producer the United States stands first as a maker of the machinery needed on the estates. We know otherwise, but the bulk of the world do not.

An Indian Opinion on our Work.

Writing from Bangalore a leading student of economics writes that he has read our July number with great interest. "What you write in your leading article (The U.K. and Sugar Production in India) ought to disarm further criticism in the matter. Since last writing two other sugar companies have been floated—one a private one, capital not offered to the public, and the other a limited liability concern. The first is in this State (Mysore), and the other in Bombay Presidency. This shows activity in the sugar line of a kind that ought to surprise pessimists. Prevailing prices are, I think, giving an incentive to production, and your discussion of the subject seems doing good out here." We are now waiting to hear what our friend thinks of the August leading article on "The Prospects of an Immediate Increase in the Output of Sugar in India," which (article) we were glad to see that the *Louisiana Planter* of October 16th produced in full (p. 254).

The International Confectioner on the Sugar Slump.

The month of August was an historic one in the sugar

world. We hope the producers have not suffered much, but for the middlemen, Government or otherwise, we have no word of pity. They have been fattening themselves on both sides, producers and consumers, and now must be hard hit, though not more so than they deserve. They thought that they could hold the world on their shoulders, and have learnt otherwise. They believe the consumer to be a bigger ass than even the cartoonists depict him, but he was not. The ass's skin as a prize has not been allotted to the public.

"The real cause of the recent slump in the price," writes the New York *International Confectioner*, can be attributed to one cause, and only one, viz.: the consumers —big and little—would not buy. Sugar consumers are not alone in refusing to buy unnecessarily high manufactured goods, nor goods that are forced to be expensive. Rubber producers are in a worse pickle than sugar planters ; even such tiny lines as tennis balls, plimsols, or tennis shoes, are miles above the pockets of the general public, with the result that instead of being about 2s. 6d. lb., raw rubber is now worth 1s. to 1s. 1d. lb. Those who are still trying to hold up the price of sugar should note what has happened to the rubber planters who unfortunately cannot help it. Then there are manufactured cotton goods ; never was the quality so poor, often downright bad, and the price so high.

Sometimes the wicked do not flourish as amazingly as they hope for. The middlemen who have been speculating in tropical produce during the last twelve months are learning all about this. American returns place their per capita consumption of sugar at about 102 lb. this year, against 83 lb. in 1919, 77 in 1918, 78 in 1916. The return for this year is open to doubt. It was rather the anticipated consumption. If America has "jibbed" as vigorously against the high price of sugar as we have in the U.K., and as it now seems Uncle Sam has done, her consumption quite possibly was somewhat closer to that of 1919.

THE USE OF EXPLOSIVES IN AGRICULTURE.

ITALIAN and French experiments go to prove, as we have always claimed was the case, that the use of explosives in agriculture is, in some cases, both an advantage and an economy. Some people hold, claims Professor Bruttini of Milan, that it is not economically possible to use explosives in agriculture. In these days one might expect such a decision as costs tend to be much higher than they were before the war, but we note with pleasure that in spite of these higher costs there seems a greater tendency to-day to give explosives a trial than was the case in 1912-13-14, when we contributed papers on the subject to the International Agricultural Congress in New York, as well as over here and in Java.

This being so, we were glad to hear, via the International Institute of Agriculture at Rome that both Italy and France speak well of the use of explosives, and find them economical, especially when the displacement of the soil is limited to narrow strips for scooping out ditches or small patches of land, also (our pet use) for opening up holes as when planting trees, for extracting tree stumps, or hollowing drainage pits. In all such local use, claims Bruttini, explosives can be used with economic advantage. Dr. Larne, of France, agrees with the Professor that the use of dynamite is to be recommended for hollowing areas for ditches and holes, and also for splitting and removing stumps. We hope therefore to hear more of the use of this willing servant in opening and developing land for planting.

Le Industrie Chemiche of Milan, pp. 29-30, of July 20th, 1919, No. 1 also discusses the use of surplus explosives as fertilizers because, at times, they may and do constitute very rich nitrogenous plant-food as, for instance, ammonium nitrate. As they are in the military magazines of course their use is impossible, but, by various means, the goodness can be extracted, as, for instance, by the addition of a fixed quantity of water to the explosive and then allowing the liquid, which is thick, to settle. A dense solution of nitrate of ammonia is thus obtained which can be decanted, run off and mixed with powdered peat. The resultant analysis shows such a combination to be similar to nitrate of soda, with which Hawaii and other places have done such wonders in the way of sugar production.

THE FUTURE OF PRICES.

A writer in *The Confectionery Journal* of London seems to be of the opinion that a possible way for stimulating the demand and therefore maintaining the price of sugar in the U.K. at a reasonable level would be to lower the price retail to 6d. lb. for white granulated, with raw and crystallized *pro rata* and wholesale values in proportion. The demand it is claimed would then be stimulated, and instead of having a shy and sulky public—both for sugar and bacon—who will not buy unless they are forced to, confidence would be restored, and the increased competition and demand would put prices at their true level and keep them there. Certainly this is not the case just now.

Vegetable Oil Notes.

OIL CAKES FOR EDIBLE FLOUR.

CAREFUL investigations have been carried out by leading American experts to test the advisability of using flour or meal made from copra, soya-bean or ground-nut cake. In all cases these flours have proved to be of considerable value as foodstuffs, and could we should imagine be made into palatable dishes. As a result of careful experiments, flour made from soya-bean and ground-nut cake was considered to be rich in proteins which are very digestible and of high biological value ; this being so they should prove of use and importance as additions to the world's larder, especially when other foodstuffs tend to become restricted (see *Agricultural Bulletin*, U.S. Dept. of Agriculture, No. 717, p. 28, Sept. 25, 1918, published at Washington). Copra meal, it is already known, offers an excellent foodstuff in many ways, once the consumer will take the trouble to ascertain how to use it to best advantage. At the moment we have mislaid our notes on this use of copra poonac, but those who have not yet tried carefully and finely-ground copra meal for human consumption need not fear to do so.

HORSE BREEDING ON COCONUT LANDS.

Those who know our two books on Coconut planting will remember that in the first one to make its appearance, i.e., "Coconuts, the Consols of the East," we give considerable prominence to the idea of rearing horses

for army use, if for no other purpose, on coconut estates where, once the trees are a fair height, the animals would have plenty of room to roam about without injuring the crops. Critics however have claimed that a suitable class of horse for war work could not be bred in the tropics. With this we did not altogether agree and now Señor Janini of Valencia in a pamphlet published in Spanish on "Horses in the Great War" (*Los Caballos en la gran guerra, ansenanzas y orientacionis*), 20 pp., 10 fig. (Hijos de Francisco Vives Mora, Valencia) claims that what the modern war horse needs is absence of nervousness, and an ability to keep going on a minimum of food, and general hardness of stamina. Horses with Arab blood in them are ideal. These animals flourish in the date palm zone, so should do under coconuts near the sea far better than some wish to allow. Those who know the horses of the Ardennes and Brittany must allow that it takes a lot to tire them and as, in these days, officers as a rule run light because they are young, thousands of these useful animals could be used when speed is required, leaving the heavier men and their mounts to do other work. Spain with its breeds of Arab and Libyan (which surely is Arab over again) strains offers excellent animals to make a start on. We are used to looking to Spain and Picardy for Jack donkeys for breeding mules, so why not for horses for coconut areas. By the way, we did not know that horned protuberances were characteristic of the Arab horse, but according to Señor Janini in another pamphlet, several breeds have rudimentary horns at times. In one case, they were about 5 cm. above the eye sockets and measured one 125 mm., and the other 187 mm. in length, and a metre is just over 39 inches (39·270), so these were regular horns. The suggestion of horns denotes Arab blood, claims Janini, and consequently animals with them possess strength and hardness, often accompanied with great beauty in shape and the straight or slightly concave profile of the heads, which when out in the open with a light background, like the desert, makes the Arab horse so attractive to gaze upon. It would seem that the animals more generally useful in modern warfare, viz.: those which can stand hardship and can travel far and fast on little food, will be found in Italy, Spain and Northern African to a greater extent than is generally believed. If this is so, such horses should be acquired to breed from on coconut estates; they should be more easily acclimatized and less costly and trying to rear.

Egyptian Oil Industries Ltd.

This company, the *Information Bureau* tells us from their office at 140, Strand, W.C., has been registered with a capital of £400,000 in £1 Shares with the object of cultivating all kinds of seed for the production of oil and also to manufacture. import, export and deal in all kinds of seeds, oils and fats in Egypt and elsewhere. The technical manager is Mr. W. Wilbushewich at 71, Jermyn St., W., whilst Messrs. Arache of Alexandria, and J. Paenson of London are Managing Directors. No mention is made of cotton growing, but evidently mineral oils and bituminous deposits will not be passed if encountered. We hope they will do well. Then there is the Australian Cotton Growing Association Ltd. (and raw cotton means cotton seed and so more oil) of 80, Bishopgate, E.C., now being formed. Capital £10,000 in £1 shares, to grow and cultivate cotton in Australia. As with the Egyptian concern, we trust this company will be well-managed and prosper.

Our Visitors.

The world is getting busy. We have had a vegetable oil expert in and out office nearly every day during the past fortnight. All of them either off to develop the industry here or overseas, or waiting to get away. Mr. J. L. Hermessen, well versed in Mexico, Ecuador and elsewhere, alone seems unable to tear himself away. He has just come back from a prolonged stay in Spain, where with suitable weather much can be done and has been done with those who made money out of the war. Mr. M. T. Dawe of Colombia is busy with several new plans. Mr. Ventress, who has had scientific and practical experience in Japan and other centres, will soon be leaving again for Brazil where, we hope, he will make things hum. If anyone can do so out there, we are sure this visitor from Japan is the man. Then we have received a note from Mr. W. H. Johnson of West African cacao fame, who having done so much for that portion of the Empire and brought it along to the present stage it boasts of (when it wants to paddle its own canoe), is now off on an even more important mission as things stand to-day, namely to investigate cotton planting in Australia. Last but not least, we were favoured with a visit from Dr. F. W. T. Hunger, whose book on the Coconut (*Cocos nucifera*, 518 pages in Dutch) we gave a preliminary notice in September, p. 139.

Dr. Hunger *v.* Lord Leverhulme.

Knowing the important work, scientific as well as practical, that Dr. Hunger was going out to Java and Sumatra to investigate, we were most anxious that Lord Leverhulme should meet him before he left (the day after their interview). After making an appointment by 'phone therefore, we found ourselves not a hundred miles from St. James' Palace listening to a discussion on vegetable oil between the head of Lever's and this prominent Dutch authority on oil-palms and vegetable oil. Needless to say we came away with much more knowledge than we possessed when the pow-wow started.

Dr. Hunger's itinerary will include Java and Sumatra (where he claims some 4,000 bouws or 7,000 acres of oil palms are under cultivation and coming along). Possibly he will be away for a year, of which eight months or less will be spent in Java, two months in Sumatra, studying oil-palms, and the rest of the time he hopes to be investigating vegetable oils in Malaya (if he has time), Borneo, Molucca, the Philippines, Japan and San Francisco, the two latter as large buyers and makers of soap, margarine, &c., as well as refiners of oil.

The Oil Palm in Malaya.

When discussing the present area under oil-palms in Malaya, Sumatra and around there, the question of the total area cropped up. The estimate mentioned by the head of Lever combine, viz. 30,000 acres, seemed to exceed Dr. Hunger's ideas, judging by what he told us afterwards, but since then we have received *The Malay Weekly Mail* for Sept. 13, where, on p. 249, we find a newsy leading article on the subject, which more than supports Lord Leverhulme's view. Query, who can we place the most reliance in, Dr. Hunger or the *Malay Mail*? Both will see these notes, so let us hope both will seek to show

how they arrive at their figures—7,000 Dr. Hunger, or 30,000 acres, *Malay Mail*. An old friend just home from the F.M.S. who is interested in oil-palms also insists that the area under oil-palms in British Malaya is less than in Sumatra.

THE "MALAY MAIL" ON THEIR LOCAL OIL PALM AREA.

Going back to the discussion as to what area may or may not be already devoted to oil-palms, our Kuala Lumpur contemporary called attention to the following grievance, which is deserving of careful attention. No doubt it is receiving it. The London agency has already flatly contradicted the statement to begin with. We are supposed, the *Malay Mail* claims, to be federated. Federation implies one policy for the four States and yet an astounding case of the reverse has come to our notice. Some months ago Perak advertised land available for the cultivation of the African oil-palm. Negri Sembilan followed suit. Pahang did not advertise, but the annual Administration Report mentions that an area of 65,000 acres has been set aside for this new form of cultivation, but Selangor remained silent.

Of this the *Malay Mail* took little stock until they received a lengthy letter from a correspondent, which runs into more than a column, so we can only give extracts. Here are two or three:—

(1) It was understood about six months ago that the cultivation of the African oil-palm was to be encouraged. Now the position is reversed. On applying for land for oil-palm planting, one receives the following reply from the Land Office: (1) 'I have the honour to inform you that the British Resident will not consent to the alienation of any land in Selangor for the purpose of cultivating the oil-palm.'

(2) "It is by no means certain that the palm will grow or seed profitably in this climate, but it is certain that the product of the F.M.S. in this line can never compete in price with the West African supply, both on account of the climatic differences and the disparity of the popu-l tions."

The second paragraph, the *Malay Mail* claimed, we were glad to see, seems rather open to discussion, especially as in one of the coast districts of Selangor a property has already been established running into some 2,000 acres, where the palms may be seen growing exceedingly well, and inquiry will show that whilst this land would not be called first-class, being flat and inclined to peat, yet the palms growing on it have started to bear fruit at 3 to 4 years of age. This climate is not very different from Sumatra where some 30,000 acres are under oil-palms.

All this time we have been quoting the *Malay Mail* who thus talks of 30,000 acres already being under oil-palms in Sumatra against Dr. Hunger's suggestion of 7,000. These plantations, whatever the area, are not everywhere in Sumatra but along the East Coast; so in fair play to the Resident of Selangor, one would ask if the climate of the suggested oil-palm belt is like the east or the west coast of Sumatra, the latter, we have always understood, not being suitable for the palm.

Where we heartily agree with *Malay Mail* is in disputing the claim that Selangor or elsewhere in the East cannot compete against West Africa as an exporter of palm-oil and oil-palm products. We feel certain it can and will, also that the head of Messrs. Lever shares this opinion. All the better if we are both wrong, but this will only be through West Africa "girding up its loins," and putting its splendid resources in order in every way. Meanwhile it is well to remember that he who would win must strive, whether in West Africa or elsewhere.

THE INVALUABLE COCONUT.

Under the above heading, the *Madras Mail* devotes a leading article (see their weekly edition of September 9, p. 210) to a survey of the coconut industry which they were moved to publish perhaps owing to the knowledge that the second edition of Munro and Brown's "A Practical Guide to Coconut Planting" had been issued, price 16s. post free. For a long time past we have seen no quotations for Malabar or Cochin copra; men in the trade tell us all the copra is needed in India to satisfy the demands of the local oil mills. The coconut and its by-products, points out this well-known Madras authority, is an industry which in the past has been allowed to fall very largely into alien hands. During the war (as with sugar and cacao) its value was fully recognized and there was a rush for it as a means of investment. The Tata Industrials Corporation and others are seeing to it that the fine coconut produce of the west coast is being worked in the interests of India and the Empire, and in the Malay Peninsula also, there is a movement in the same direction. At present the coconut industry is confined almost entirely to the west coast of India, the palms on the eastern side being used for the production of toddy—but there is no reason why toddy should be the only product, or why oil and other produce should come only from the western side of the Indian Peninsula.

TRADE IN INDIAN OIL SEEDS.

The report of the Indian Committee of the Imperial Institute on the trade of India in oil-seeds has been published by Mr. John Murray, price 6s. net. The volume emphasizes in a striking way the vast importance of the Indian oil-seed industry. The total annual production of oil seeds of all kinds in India is probably well over 5,000,000 tons in quantity and £50,000,000 in value; in normal times approximately one-third of the output is exported.

No other country produces in commercial quantities so great a variety of oil-seeds. Of the ten chief of these, viz., linseed, ground-nuts, cotton seed, rape seed, castor seed, sesame seed, copra, mowra seed, poppy seed and niger seed, India supplies no less than 30 per cent. of the total amount entering commerce.

Before the war about one-third of the total quantity of oil-seeds exported from India came to the United Kingdom, the chief kinds being cotton seed, linseed and castor seed. Certain other oil seeds, such as ground nuts, sesame, copra and mowra, were shipped mainly to France, Germany and Belgium.

Various suggestions are made by the Committee with a view to extending the trade in Indian oil-seeds with the United Kingdom and developing the British oil-seed crushing industry.

It is considered that a free choice of the raw material produced within the Empire should be secured for this industry, if necessary by a system of rationing and licensing in the producing country. If further assistance is required an import duty should be imposed on oils and fats of all kinds imported to the United Kingdom from foreign countries. The Committee consider that the

latter method would be more satisfactory than a preferential export duty on Indian oil-seeds.

A memorandum on the effect of import tariffs on the oil-seed crushing industry, by Mr. J. W. Pearson, Chairman of the Seed-Crushers' Association of the United Kingdom, is appended to the Report. The volume also contains a detailed account of the Indian oil seeds, prepared at the Imperial Institute for the Committee.

Prices of Copra and Coconut Oil, &c.

We have enough oil notes to fill the entire issue, but until our subscribers' list increases sufficiently to justify our devoting more space to this important industry, we are forced, with great regret, to cut our notes down. Already they are longer than they should be.

NOVEMBER PRICES.

Copra per ton—Spot.

	London						Marseilles	Hamburg and Rotterdam.				
	F.M.S.						Ceylon	F.M.	F.M.S.			
	£	s.	d.		£	s.	d.	£ s.	£	s.		£ s.
Nov. 19 ...	51	7	6	to	51	15	0	52 15	N/Q*	52	0	to 53 10
,, 18 ...	52	0	0					53 0	,,	54	0	
,, 16 ...	51	15	0	,,	52	7	6	53 5	,,	55	0	
,, 15 ...	53	5	0	,,	53	10	0	54 10	,,	55	10	
,, 12 ...	53	5	0	,,	54	10	0	54 5	,,	55	0	

Coconut Oil per ton.

	Ceylon				Cochin			
	Spot		For shipment		Spot		For shipment	
	£	s.	£	s.	£	s.	£	s.
Nov. 19 ...	90	0	83	0	100	0	86	0
,, 18 ...	90	0	83	0	100	0	86	0
,, 16 ...	93	0	89	0	98	0	91	0
,, 15 ...	93	0	89	0	98	0	91	0
,, 12 ...	93	0	89	0	98	0	91	0

Other Oils per ton.

	Castor Firsts	Ground-nut Crude†	Palm kernel Crude Hull spot	Cotton seed Crude Egypt
	£	£	£	£
Nov. 19 ...	77	72	N/Q	52
,, 18 ...	77	74	,,	52
,, 16 ...	77	N/Q	,,	52
,, 15 ...	77	76	,,	55
,, 12 ...	77	76	,,	55

* N/Q—No quotations. † Oriental for shipment.

Marseilles, it will be noted, was buying so little, if anything at all, that there has been no market.

"Tropical Life" at the Play.

We have seen two plays this week and found them both excellent. In "The Shop Girl" at the Gaiety, Mr. Alfred Lester as Miggles, the shopwalker at Parker's Stores, is worth coming a long way to see; so whether you are in Australia, the South Seas or the middle of Africa, make a note of it for when you are in London. But if Miggles is a masterpiece so is the little messenger boy who acts with him—such a miscroscopic atom too, and yet very much a boy, no girl dressed boy-like to spoil the play. But who is he, why is his name absent from the programme?

Mr. Thorpe Bates and Miss Evelyn Laye pleased us greatly and so did Mr. Robert Nainby; we thought him especially good as the Count, also Mr. Fred Hearne as Bertie Boyd.

We were anxious to see "Priscilla and the Profligate" at the Duke of York's Theatre, with Miss Iris Hoey as Priscilla, and now we have done so and want to go again. We had heard good reports of Mr. A. G. Poulton as Mr. Macready and Mr. Frank Denton as Jimmy Forde, and found they deserved all the nice things said of them. This is certainly a play one must go and see both for the acting and the plot. The latter is so quaint, one wonders whether such things happen in real life. If they do, may we be there to see the fun. You run away from your wife, and then—because you think she is some one else's wife you are sure that she is a peach, and want to run off again, taking her with you this time, and Priscilla consents to go, because—well go and see for yourself and you will like Miss Hoey as Priscilla as much as we did.

"The New Whirligig" at the Palace Theatre continues to be just as centripedal as the old version, drawing everyone to this centre of attraction once they are anywhere within reach. The most attractive of the many enticing turns is, in our opinion, The Birth of a Butterfly (Scene 6), whilst later on, The Fan Dance in "The Art of the Fan" ran it very close, even if "New Year's Eve," which immediately precedes it, is the most amusing. The idea of a burglar (Mr. Billy Merson) promising to recommend a householder (Mr. Arthur Margetson) and his wife (Miss Violet Loraine) to the Burglars' Union because they were so kind to him, struck us as being very funny. Altogether it is a very good show, and if you have had a stiff time and want a little pleasant relaxation, go and see "The New Whirligig" and let others do the hustling, whilst you rest and laugh at them.

Literary Notes.

Recent publishers' lists have one or two interesting books connected with the Tropics on their last list, including one entitled "Zanzibar," by Major Francis Pearce, 30s. net; "The Tanganyika Territory" (formerly German East Africa), by F. S. Joelson, 21s. net; and, last but not least, an authoritative work on "West African Forests and Forestry," by A. Harold Unwin, D.Oec., M.Can.S.F.E., author of "Future Forest Trees," with upwards of 150 illustrations, cloth, £3 3s. net. The author, who, as many of our readers know, was late Senior Conservator of Forests in Nigeria, and having spent thirteen years in West Africa in forestry work, has had exceptional experience. He starts by dealing in general with West African forests, then successively, in geographical order, with the trees and forests of the Gambia, Sierra Leone, Liberia, the Ivory and Gold Coasts, Togo and Nigeria, and the British sphere of the Cameroons. He supplies notes on timber trees both for export and local use, and gives throughout the botanical and vernacular names of indigenous trees. Furthermore, we are glad to see Dr. Unwin has also devoted some chapters on the oil beans, seeds and nuts of the West African forests; on the oil palm and palm kernel industry; and the question of the forest in relation to agriculture. The work is an elaborate one, marked by singular thoroughness in its execution, and costs three guineas, but, written by such an authority, it deserves a wide range of readers. In view of complaints that, although the world is inclined to be overdone with Accra cocoa, the natives are still cutting into the forest land to plant up more gardens (abandoning their old pest-ridden ones to spread disease and trouble on all sides), too much attention cannot be given to forestry, especially on the Gold Coast, where the areas, never too large, are being reduced to a dangerous extent and generating mischief whilst this is being done.

Tropical Life "Friend."—No. 185.

Dr. A. H. UNWIN, D.Oec.

Our Expert on Tropical Forestry.

"OUR FRIEND" was born in Surrey where trees flourish and are amazingly beautiful to gaze on. He therefore speaks the truth when he tells you that he does not remember the time when he did not know the names of the English trees and it has been related that his first lesson in forestry took place in his sixth year, when he greatly helped (possibly by not getting in the way or standing just where the tree wanted to fall) at the felling of a very large oak some 18ft. in circumference, that was flourishing in the copse at the end of their garden. The knowledge gathered in one copse soon led "Our Friend" to move on to others and especially to some neighbouring woods called "The Hangers." Any lover and genuine student of tree-life and forest growth will realize how congenial were the surroundings amidst which the future chronicler of a very different class of forest and wood grew up.

His school career took him in Yorkshire to other scenes but he still followed the trees and spent his pocket money on leading works like "Schlich's Manual of Forestry," to learn still more about them, and finally against the wishes and advice of everybody, he determined to train himself for a but little known, and still less understood profession, that of a forestry expert. With this object in view he betook himself to the Harz (sometimes spelt Hartz) mountain forests, where he learnt not only to know the trees, but how to plant, fell, to bark and to transport them. He also took practical lessons in road-making and improving the flow of the stream in one place and banking it up in another, important work which all forestry or estate experts should be trained in.

After this followed a couple of years training at the Royal Forest College at Tharandt in Saxony and then another twenty-months' spell of training in Forestry and Economics at Munich, whence Dr. Unwin emerged with his degree in these subjects. After this, widely-spread travels throughout nearly all the large forest areas in Germany—which has so much to teach the student of trees and tree-life, as well as in the West of France, laid the foundation of one of the most excellent forestry trainings man can wish for. It only remains for him to build up on this solid base. Thus, in due course, the Island of Rugen in the Baltic, the forests around Berlin and Dresden all received attention, whilst early in 1900 Dr. Unwin carried out a forest survey for a estate in Bohemia.

Then he went to other centres. In 1903 he was offered and accepted the appointment of Forest Inspector in Canada, where the whole of one summer was spent in surveying over four thousand miles of prairie country, in the course of which trees had to be inspected and planted, and farmers advised with regard to future afforestation work.

This was followed in 1904 by the appointment as Assistant Conservator of Forests in Nigeria, whilst in 1905 appeared Dr. Unwin's book on "Future Forest Trees," in which is described the experimental plantings of North American trees in Europe. About a dozen years later found "Our Friend" firmly established as Senior Conservator of Forests in Nigeria, with an amazing amount of work done, and fresh knowledge and experience accumulated, especially as, during that period, with his insatiable appetite—one that grew more ravenous the more it was fed—for knowledge, Dr. Unwin, from all we can gather, invariably spent his periods of leave in visiting and studying the forest areas of Europe, including France, Switzerland, Belgium, Holland, Denmark, Germany again, and also Norway and Sweden, not forgetting the best of the tree-covered lands in this country. What more can mortal man want to know, in temperate and tropical zones alike, to place him from the root to the top of the tree—where Dr. Unwin stands to-day—in every sense of the word.

In spite of this, however, the portion of the Doctor's work that we understand best, and follow most closely, is that in connection with, as "Our Friend" so aptly describes it, the dreadful process of desecration going on in Nigeria—of which he has had sixteen years' experience. How often have we bewailed this drying-up, this unnecessary, because preventable, drying-up of Africa? Like ourselves, Dr. Unwin is dead against the indiscriminate clearing of valuable forest areas which are seriously needed, on the Gold Coast, in order to plant cacoa, which is a drug on the market as it is, and yet of which far larger crops can be produced from the areas already planted. Attention has been called to this scandal in "West Africa" by Dr. Unwin and by other writers in the chocolate and margarine trade papers, so no one can say that this suicidal policy has not been challenged.

Such a man, with such an experience, was bound, sooner or later, to give the world a monument of his learning and experience. We are glad, in the case of Dr. Unwin, that it has taken the form chosen. Following on his important and quite book-like reports on (1) "The Forests and Forestry in Sierra Leone," (2) "The Afforestation of Togo-land," (3) "Cacao and Rubber in the Cameroons," (4) "The Agricultural Resources of the Cameroons," comes his work, already a classic, since it is the one book all must turn to, on "West African Forests and Forestry." And there we will leave both book and author, only saying as we do so, that when you open the book again, see if you do not consider the chapter on "Forests in Relation to Agriculture" the best in this best of books. To our mind it is undoubtedly the most important in the work. May its teaching be thoroughly absorbed, so that its influence can spread far and wide, especially throughout Equatorial Africa.

Business Notices.

1.—The address of Tropical Life is Messrs. Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.

2.—All **literary communications** should be addressed **to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

3.—All **business communications and payments**, either for subscriptions or advertisements, should be sent **to the Publishers** of Tropical Life. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

4.—The Subscription, which is **Twenty Shillings** per annum, may commence at any time, and is payable in advance. Life Subscription, £10.

5.—The Advertisement Department is at 112, Fenchurch Street, E.C., where all inquiries respecting advertisements, charges, &c., should be addressed c/o the Manager of the Department. At the same time will advertisers kindly note that all copy and blocks for advertisements must be sent to 112, Fenchurch Street, E.C., before the thirteenth of each month, failing which, insertion of same in current month cannot be guaranteed.

6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Advertisers are only entitled to three changes of matter in the year of twelve issues, unless (1) they send electros for insertion, or (2) are willing to pay for the cost of setting up the advertisement. Owing to present high cost of composition and printing work we cannot depart from this rule.

8.—**Changes of address should be promptly notified.**

9.—**Non-receipt of copies of the Journal should be notified to the Publishers.**

10.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

November, 1920.

The Production of Long-Staple Cotton in India.

Can it be made a Possibility?

Next month "Our Friend" will be Mr. Noël Deerr, who, with his great twin-brother in science, Dr. Prinsen Geerligs, stands at the top of the tree as regards reputations in connection with anything to do with sugar. We devoutly wish we had two such men equally eminent in connection with cotton, especially in India. One such expert would be extremely useful, but where is such a man to be found who would go and do for India with cotton as Mr. Noël Deerr is now on his way out there to do with sugar. In connection with the Indian Sugar Corporation, under the auspices of the house of Tata, of Bombay (about which venture with its capital of five millions sterling we devoted our leading articles in July and August), Mr. Deerr will, we hope and believe, help India—in friendly but serious competition with Cuba—to leave even that island behind so far as the production of sugar is concerned.*

We say this because we have long felt it to be possible, easily possible, to grow cotton once India is offered the men and the money to do it with as is now the case with sugar. And we believe that once an equal amount of capital and an equal share of experience in improved long-stapled production were offered to her to produce this much-needed fibre, as has been done with sugar, India would soon be rivalling Egypt, and even leaving her behind. Are there no two men in the cotton world that can rival with their life-long experience Messrs. Deerr and Geerligs with sugar? Do not waste time, but secure the services of at least one of them—say Professor E. C. Green, now in Brazil—and send him flying off to India to get busy at once with a report as to what can be done and how he and others will set about to do it. Ask men like Mr. John W. McConnell, of Manchester, if our ideas are not practical and correct.

Our only plea is to keep any State-aided scheme out of the proposals, as otherwise you will bring in a train of officials and hon. (=honorarium) assistants, that are bound to choke off all chances of success. It is no use talking of *£100,000* either. Start with a possible *£2,000,000* or leave it alone. But you will get the money once a private firm undertakes the work, for then everyone must realize that, as with the sugar scheme, since those at the head of affairs will lose heavily if the scheme fails, we need not look for failure. Elsewhere than in India no doubt State aid must be obtained, but if any good is to be done with cotton in India to-day there must be at least ten times as much money as any Government will want to put down, and if twenty times all the better. Above all, private individuals must be in charge, and the corporation run to make a profit or not at all.

Questions concerning irrigation and transport must be asked and answered, and whilst a certain amount of clearing and draining would be necessary, those resident on the areas to be planted should not be disturbed, but on the contrary every effort must be made to interest them in the scheme. All these points, and the question of labour supplies, cotton-farmers, &c., to supply the ginneries must be gone into and incorporated in the report. Everything points to the need of such a scheme. The Empire should be made independent of outside cotton so far as is possible. America is up against the boll-weevil and other pests to a degree that threatens to curtail her present output, such as it is, with regard to the world-demand, just

* With regard to this Indian Sugar Corporation we might add that Mr. B. J. Padshah, of Messrs. Tata Ltd., and a member of the Indian Sugar Committee, wrote us as follows the other day—"It is a general misunderstanding that the Indian Sugar Corporation is a Tata Concern; this is not correct, for the Tatas have no more interest in it than any other Director. They do not even manage the concern, nor take the managing agency profits as is the case with the managing agents of other Indian sugar factories. The Indian Sugar Corporation is an independent entity for which the firm (of Tata) takes no responsibility, and in the profits of which they are not interested. What they are doing is to lend the benefit of their organization to such new concerns as they have confidence in, just as a Government at times loans its officials to help private industries in their initial stages." A recent issue of *The Agricultural Journal of India* included (facing p. 378, as Plate No. xx) an excellent photograph of the members of the Indian Sugar Committee, including Mr. Padshad; also Mr. Wynne Sayer.

when we want a good 50 per cent. more instead of anything less, and just when we have all realized that the rubber industry cannot flourish, and raw rubber cannot be used to the extent that it could be and would be used, until supplies of long-staple cotton are ample and prices at a reliable commercial level instead of being "in the clouds" as at present.

Let us take stock of what Egypt has done along lines similar to those we wish to see adopted in India. We will pick up the first book to hand, but there are many others. We have *The Agricultural Journal of Egypt* vol. ix, of 1920. Price P.T. 5, issued by the Ministry of Agriculture at Cairo, of which Mr. A. T. McKillop is Inspector-General.

Here, covering pp. 14-49, is a most instructive article by our old friend Mr. H. A. Ballou, M.Sc., the Imperial Entomologist to the West Indies, whom we welcomed to the Entomological Congress in London last June. (See our leader for that month, p. 89.) Under the title of "Notes on the Cotton Crop in Egypt," Mr. Ballou, after many tables and statistics as to areas planted, yields, total crops, &c., comes, on p. 27, to "Varieties of Cotton."

The two paragraphs immediately preceding this heading should be carefully noted. Mr. Albert Howard, of Pusa, told us the same thing in connection with India—that you can have too much of a good thing in the shape of irrigation water—as Mr. Ballou says with cotton in Egypt, viz: "From about the time that the water from the Assouan or Aswân Dam began to be felt the yields from the cotton area supplied have been lower, and have steadily decreased to the present time.

"The increased water supply has brought under cultivation land which is unsuitable, or only partly suitable, for cotton. High level canals made it easy to overwater and raise the subsoil water and thus, in two ways, the improved water supply has directly influenced the falling off in yield. The smaller yields from large areas of new lands, and the reduced yields produced by good lands as a result of too much irrigation and not enough drainage, have been the most important and most persistent causes of the gradual reduction of yield of cotton per *feddan* (= 1·038 acres) during the past twenty years. They are both direct results of the increased water supply." So let those who seek to plant long-staple cotton in India remember what both Messrs. Albert Howard and H. A. Ballou have to say about the drawback of over supplies of water.

Coming to the varieties planted, an idea is given to which we have already called attention in previous issues, of how a new variety is evolved, then planted, and how it flourishes for a time, finally giving place to a new kind, practically always a hybrid, that is better than the favourite under cultivation.

Going back to p. 17 in Mr. Ballou's article we are told that previous to 1820, which marked the beginning of modern cotton production in Egypt,* there was no definite Egyptian cotton. Starting with *Jumel* as a local variety (in 1820), frequent importations of seeds from the United States, from Brazil, and from India were made with the idea of evolving a better variety than the local *Jumel*. In the early sixties, the Civil War in America induced the planting of greatly increased areas, as the Great War should do at the present time in India and elsewhere, and the *Ashmuni* variety came into cultivation. By 1870, this was said to be the only kind cultivated in Egypt except odd areas here and there.

The *Ashmuni* cotton reigned supreme until the appearance of the well-known *Mit 'Afifi* which was introduced between 1882 and 1885, and from that time this was grown in steadily increasing quantities in Lower Egypt until, in the late eighties, *Ashmuni* became the cotton of Upper Egypt with *Mit 'Afifi* in the Delta where it seems to have come into favour as being a heavier yielder than its rival, as well as giving a better quality lint and a higher out-turn at the ginnery.

In 1905 some 77 per cent. of the total crop of Egypt was *Afifi*, but since then the crop has steadily grown less and less, until finally the newest and last favourite came on the scene in the shape of the now much talked of *Sakellarides* variety. This kind, although only known since 1911, has increased in favour just as the *Afifi* did before it until, even in 1916, it amounted to 62·3 per cent. of the total crop. What the proportion is to-day is difficult to say off-hand, but in 1917 it had already constituted about 86·5 of the crop of the Delta area and 67·6 per cent. of the total output for the whole of Egypt.

All this and much more must be studied and borne in mind by everyone seeking to evolve fresh strains of long-staple cottons which must be secured if the strength and quality of the resulting fabric are to be maintained, whether used for rubber tyres or anything else. Those, therefore, wishing to launch out into this interesting and—should be—profitable industry, must study the life histories of the favourites of to-day and yesterday. Above all they must learn for certain by what routes these strains arrived in Egypt or elsewhere, as Arizona, and then systematically start to work out hybrids of their own, so as to have one that is always better than what already exists. This is the work that the Noël Deerrs and the Geerligs of the cotton world must do for India if cotton production is ever to prove a decisive success over there. Until you are sure of help being forthcoming in the shape of proved experts, we must not be in a hurry to start, and rubber will have to wait. We hope not for long.

The favour which the *Sakellarides* has found in the eyes of the planters of Egypt, does not result from its being a heavy yielding variety so much as from its finer qualities, and, we believe, for its famous "kink" in the fibres. These qualities have given it an unchallenged prominence in the cotton manufacturing world. But already it has passed its best, we are told. Who, therefore, is ready with one better to replace it? At the same time "Sakel," as it is known by the trade, has one great advantage to the producer. Its earliness is greatly in its favour, especially when the pink boll-worm is around.

ACCORDING to the *West Coast Leader*, of Lima, Peru, a schooner was en route for New York, with the whole of her cargo consisting of coconut oil. This boat, the *Scotia Maiden*, an auxiliary schooner of 512 gross tons, arrived at Bilboa on August 3 from Papeete, Tahiti, with a cargo consisting of 1,723 barrels of coconut oil, which she is carrying to New York.

* What a splendid opportunity is offered by the Exhibition and Congress in London next June to celebrate this Centenary of the most important of all Egypt's industries.

Rubber and Cotton Notes.

Is the Dearness and Short Supply of Long Staple Cotton Helping to Depress the Price of Rubber?

It may be remembered that not long ago the price for raw rubber advanced from under 1s. 6d. per lb. to over 1s. 8d., we believe to 1s. 8½d., per lb., but the price did not hold, and so by the time that these notes are being put together values have gone back as low as 1s. 1½d. for crêpe and (below) 1s. 1d. for sheet.

Over-production, of course, is the cause of this, but twiddle the case round and say that the blame is due entirely to under-demand, and then seek for the remedy, or remedies—which are always there if you mean to find them—and, having found them, apply them to the disease. This cannot always be done at once, more often than not it is easy to find the remedy; the trouble lies in the application, and this is certainly the case when we set out to try and remedy the pest with which we are now beset, and which is known as "lack of demand for raw rubber."

There are more cures than one for this evil. Not being quacks we do not profess to have all the remedies, but we do know of one that will greatly help, not only at the moment, but for all time to come, so let us try to help perfect that one remedy in every way and at every period that we can.

One Way to Help—Grow more Cotton.

We hope to be able to create more confidence first in the breeding of new strains of long-staple cotton, and then in stimulating the desire of those with capital to finance bona-fide and well thought-out schemes to produce such cottons everywhere that they will grow, within the Empire, by preference, but beyond the boundaries of the Empire, and especially within the cotton belt of Brazil and Peru, in preference to elsewhere if we cannot satisfy our needs within the Empire. Between India and Mesopotamia, however, we ought not to need going elsewhere.

Without troubling to look up our notes, dating back into last century, or to study or to turn to the books of reference on our shelves, we would claim that all the long staple cottons owe their origin to Brazil, especially Pernambuco and Peru. If there is an exception it would be that Mexico can claim a share. These cottons went to the United States, to Egypt, to the West Indies and elsewhere, and have been crossed and hybridized until their own parents hardly know them. None of these exotic hybrids, pure bred or cross-bred, remain the same for very long—what is the period, is twenty to twenty-five years too short? Has this not proved the case with the past favourites in Egypt? Is it not also becoming true with "Sakels" (sakellardides) of to-day? Buy the best sakels that money can give you, weave it into tyre fabric, and offer it to any old-established and first-class rubber tyre maker, asking him at the same time, to honestly test its lasting capacities with those of ten years ago. Do this and I am sure he will say that there is a twenty-five per cent. depreciation in such cotton to-day as compared with when it first came into favour. As we said, therefore, in our last two issues, one of the surest ways to help raw rubber is to assure regular supplies of high-class long-staple cottons for tyre-fabrics, always being ready to replace a passing favourite with one that is equal to or better than any strains that have passed their best. This question is also discussed in our leading article.

Restriction of Rubber Outputs.

Discussing our leading article with Mr. Fraser, of Messrs. Lloyd, Matheson and Carritt, who has had a long spell out East, he told us that he agrees with Mr. Killick, the rubber expert on the *Financier*, when the latter claimed that we had missed a chance to drive home the point of our argument when urging all planters to do their share in restricting the output for a time. "What I should like to see, and what really ought to be done," rightly explained Mr. Fraser, "is to suspend tapping for three months—say February, March, April—altogether. That would instil confidence all round, as then there would be no doubt of the necessary twenty-five per cent. being knocked off, and if any latex is seen knocking around it would be but reasonable and proper to make inquiries." Far better for the trees, also, to give them a complete rest for three months and then tap fully, than to keep tinkering at them all the year round.

News of Mr. H. H. de Vasconcellos.

Mr. Morgan, of the Consul-General's office in London, tells us that their former acting chief, Mr. de Vasconcellos, has at last managed to slip away to Brazil for a few months' holiday. When he last stood upon his native soil is more than we can say, but it must have been a number of years before the war started. In spite of this, we doubt if he will be left in peace for long—a drawback of being really useful and popular in a place like London, especially as the strenuous, able years of work he put in as acting Consul-General, and the willingness he showed to help all sides, does not promise well for his being left at peace for long on the other side. An acknowledged authority on the exploitation and trade in Brazilian rubber is sure to cause the executive committee of next year's rubber exhibition, of which committee Mr. de Vasconcellos is a member, to start looking out for his return in May, if not before—and then there are others.

Marseilles Means to go Ahead.

When we last met our friend Monsieur Baillaud, the chief permanent official of the Colonial Institute, he warned us after discussing the meeting of the Anglo-French merchants to discuss the African trade, that Marseilles was not content with being known as a big vegetable oil centre, but was also working to become a rubber importing centre as well. Their great hope is to keep up the ratio of rubber imports coming through Marseilles during the war. If their total receipts ran to hundreds of tons in the old days, latterly it has numbered as many thousands, which means much money to this centre of Southern France. If France, it is reckoned, now requires 22,000 tons of raw rubber in a year, two-thirds of this quantity it is estimated can pass through Marseilles both to the benefit of that port and the rubber users in France who would then draw their supplies from the southern port. Four thousand tons, it is reckoned, will come from Brazil.

A HANDY GUIDE-BOOK.

We have received from Mr. Charles Watney, Courtfield House, Courtfield Road, South Kensington, W., who represents the Incorporated Society of Planters of the F.M.S. in London, an excellent little hand-book for the prospective estate assistant about to proceed to British Malaya to take up a position on one or other of the estates. Much of the advice given is applicable to all centres; certainly every tropical man will be the better for seeing a copy. The cost is only 3s. 6d. net, the value of the map alone of the F.M.S., which useful addition is contained in a pocket inside the back cover. The book, claims Mr. A. B. Milne in the Foreword, will discourage the wrong type of employer in the first place and the wrong type of employee in the second. The planter and his assistants of to-day must be much more wide-awake individuals than they used to be. Nothing but the best pays to-day. A careful perusal of this little book will help the prospective tropical worker to be one of the best.

One point that needs the widest publicity is the warning contained in the author's preface—the author, by-the-bye—is Mr. C. Ward-Jackson—which plainly tells ex-army men not to proceed to Malaya, without a definite appointment and without undergoing a proper and thorough medical examination. We say the same in our guide "Verb. Sap," which, with Mr. Ward-Jackson's book, should be on every tropical worker's table, be he planter or anything else, whether he is a worker resident in the tropics, or an employer of labour over there who resides on this side.

THE FALL IN RUBBER PRICES.

The remarks made elsewhere as to the public's unwillingness to buy sugar or bacon at their present outrageous prices, which no one feels to be necessary, also apply to rubber in its manufactured form, or to motors which require rubber for the tyres. Makers for motor cars may protest and say "It's not our fault," to which the answer would be "Who said it was? It may be the employees' fault, in the same way as most people claim that it is the Government who are keeping up prices generally, with the mistaken idea that, on paper, they can unload with less of a loss than if they reduced everything to the level of the popular idea of values, or even below, and left the competition of the masses to adjust prices." Until, also, the public consider that they are receiving value for their money in the shape of manufactured rubber goods, they will abstain from buying, and the price of the raw material, consequently the producers also, will suffer.

It has been said that even a shilling per lb. was touched as the price for plantation rubber of the best quality; if so, let us take it as a lesson and get away from such a level as speedily as possible, by giving the public what they are clamouring for at a fair price in proportion to the cost of the raw material. Owing to the slump in the manufactured rubber industry, we have been assured that thousands of people are out of work. We are not surprised, but can only wonder at their preferring to be out of work rather than to receive a fair wage, and their employers a fair profit, thus enabling the public to buy the finished article at a fair price. This cannot be done at present.

MESSRS. LLOYD, MATHESON AND CARRITT'S REPORT.

On November 4th we believe it was that Fine Plantation touched 1s. per lb., to leave off at 1s. $0\frac{3}{4}$d against 1s. $2\frac{1}{2}$d. the week before. Para, at this time, was at 1s. $5\frac{1}{4}$d., and cabled advices from Singapore spoke of 45 cents. for Standard Crêpe and 42 cents. for Sheet (1s. 3d. and 1s. $2\frac{1}{4}$d. per lb.). This week, ending November 18th, quotations ruled as follows:—

Spot quotations—	1920 Nov. 18th.	1920 11th.	1919. 20th.
	s. d.	s. d.	s. d.
Smoked sheet (F.A.Q.) ...	1 0	1 $0\frac{1}{2}$	2 $4\frac{1}{2}$
Crêpe (standard quality) ...	1 $0\frac{3}{4}$	1 $1\frac{1}{2}$	2 $4\frac{1}{2}$
Parà	1 $4\frac{1}{2}$	1 5	2 6

Forward positions—	Smoked Sheet	Crepe
	s. d.	s. d.
1920, November	1 0	1 0
,, December	1 $0\frac{1}{4}$	1 1
1921, January—March	1 $1\frac{1}{4}$	1 $1\frac{3}{4}$
,, January—June	1 1	1 $2\frac{1}{2}$

Stocks—	Tons	Tons
Plantation, London	.. Nov. 13th, 1920, 43,996	... Nov. 1st, 1919, 25,353
Parà, Liverpool	... ,, 1st, ,, 600	... ,, ,, 700
	Total 44,596	Total 26,053

THIS year—1920—*Current Opinion* of New York reminds us, is the centenary of the discovery of quinine, of which more has been used in the world than any other drug. Our memory is not as good as it was, but we believe we owe this precious alkaloid to Pelletier, but at the same time also associate the name of Caventon with its discovery. Notes to hand however tell us that in 1826, 1,593 cwt. of bark were used by four chemists alone in Paris, whilst in the whole of France some 90,000 oz. of quinine is said to have been produced in that year.

Trade, Politics and Finance.

ALMOST from the time TROPICAL LIFE first started have our old friends, the Trinidad Shipping and Trading Co., Ltd., favoured us with their circulars which, carefully drawn up and full of information, were always welcomed both by ourselves and our visitors. We now learn that this firm with their fleet and trading connections have been acquired by Messrs. Furness, Withy and Co., Ltd., and that henceforth the business will be conducted under that name. We wish the new venture, based on solid old-established connections, the best of luck.

There is no doubt the cause of nine-tenths of the unrest in the world is the shortage of most of the needs of the multitude and the consequent high cost of what there is to go round. On this point the following remarks are not without interest.

Presiding at the twelfth annual general meeting of the Argentine Estates of Bovril, Ltd., held in London on August 26th, 1920, Sir George Lawson Johnston (chairman), referring to his recent visit to the Argentine, said:—

"In the Argentine I found the price of bread, meat, sugar and eggs all over twice the 1914 cost, though these articles are all produced in, and surpluses are even exported from, that country; whilst coal, which is imported into Buenos Aires, costs over five times the pre-war price.

"The bulk of the discontent all over the world is caused not simply by the increase in prices, but because popular opinion believes them to have been raised excessively by 'profiteers.' As we of the Bovril Group are somewhat persistent anti-'profiteers' in precept and practice, I take the liberty of suggesting that until the matter is investigated officially and internationally, and the instances and effects of 'profiteering' are sifted out from the other causes creating the rise in the cost of living, we shall not begin to get rid of the feelings of class suspicion and discontent that are so prevalent throughout the world.

"I see the League of Nations has committees on armaments, international health, transit, waterway problems, and international justice. May I, therefore, suggest to the authorities of that League that they can do a great world service by adding a committee to consider internationally the question of the cost of food?"

As we go to press the shareholders of the African and Eastern Trade Corporation (in other words, Messrs. Millers, Swanzy, Lagos Stores, and, it is to be supposed, A. J. Caley and Co., the chocolate-making firm) are having their final discussion as to whether they will or will not amalgamate with Messrs. Lever Bros., Ltd. All we know definitely so far is that on November 5th, at a meeting held up at Liverpool of the A. and E.T.C., the proposal to amalgamate was carried by an overwhelming majority. The formal poll has now to be taken, and probably before the final proofs are passed we shall know the decision.

The Presidential election in America is over, and Senator Harding has been elected. We hope he will do as well to "pull up" America as Theodore Roosevelt would have done had he been alive to-day. We all have our strong and weak points, and it is not unlikely that had Colonel Roosevelt still been with us the situation would have appealed to the practical side of his nature, and so have left but little room for the romantic outbreaks to which he was liable at times. Senator Harding is unknown to us, but so long as he works on entirely different lines to President Wilson's crazy ideas—with regard to Europe (we know nothing of his handling of America's home affairs, except that no one seems to approve of his methods)—then surely both America and the world at large will be better for the change. One cannot help wondering to what extent the history of 1918-1921 would have been altered had his first wife, Miss Axson of Savannah, Ga., still have been at the White House to help the President. We fancy it would have been very different. We like hustlers; they are stimulating, but we always respect and sometimes listen to (when we have time) those quieter and less aggressive natures for which the Southern States of America have always been famous. However, we are fatalists to the extent that we believe what happens is for the best, and in that light we suppose the sequence of events since 1914 will turn out to be to the advantage of the world in the long run, and so accept the situation as we find it. We fully agree with the London *Observer* when it says that Mr. Woodrow Wilson has experienced a tragic fall seldom paralleled. To this we would add that if ever a man cried out for the punishment he received, the present head of the United States did. We trust that he realizes how easily he has got off by merely being side-tracked. The sooner the world forgets him—as the chief citizen of America—the pleasanter will be our thoughts, at least on this side of the Herring Pond.

Cuba seems in less of a pickle than she was. It is to be hoped her experiences of late will induce her estate owners to run their own bank another time. A more satisfactory state of affairs in that island has lessened the pressure to sell ex first hands, but it is still recognized that sugar in the United Kingdom is much dearer than it should be and that it must come down considerably, and if willingly all the better—if our stocks are to be cleared off at anything like the present basis of international values.

The output of coffee in Brazil seems pulling up again, the latest receipts being 5,890,000 bags against 3,608,000 last year, 4,118,000 in 1919, and 7,082,000 in 1917. The Rio exchange seems to have dropped heavily; it is under 1s.

The price of raw cotton has gone back to a serious but pleasant extent for buyers. The public refused to buy; they could not go on doing so at the old rates, the same as with sugar. Unfortunately, also as with sugar, the shops are charging as high as ever for very poor quality wares. It is to be hoped now that we shall have both better piece goods and sewing cotton as well at lower prices. They are badly needed, both for producers and consumers, especially the latter, who have suffered enough. With "fully middling" under 1s. per lb., a price like 10d. or 11d. for a reel of cotton is as great a scandal as any case of profiteering we have heard of. Shellac keeps steady at 530s. for T.N. and 485s. for A.C. The best Manila hemp drags at £63, and New Zealand is dull around £55. There is no recent quotation for sisal. Tin, after a run-up, has again dropped to £240 to £244 according to delivery, and Copper, also lower, is about £81 to £83.

The following is a comparison of the principal points in the returns of the Bank of England at the present time and in the corresponding week of last year:—

November 20th.	1920	1919
Bank Bullion ...	£123,719,324	£87,964,791
Reserve of Notes ...	12,852,455	19,080,660
Private Securities ...	75,165,989	80,816,165
Notes in Circulation ...	127,569,380	85,676,315
Rate of Discount ...	7 per cent.	6 per cent.
Price of 2½% Consols ...	44⅜	51
Price of Bar Silver ...	49⅞d.	73½d.

The London Cocoa Market.

By the Editor.

For the third week in succession London has practically received no cocoa but delivered a fairly large quantity, and yet also, for the third (and thirtieth) week in succession, the "Lane" has assured you that there is nothing doing worth mentioning, and that the trade, i.e., the home trade, will not come in until a surer foundation is arrived at than can be claimed at present with regard to prices.

"Let them keep out," say some; "we do not want them," and no doubt they do get on all right, but it is a great gamble as to who will be the lucky seller. If you are particularly anxious to get rid of a lot,

somehow pure cussedness comes along and nothing will move it. At the best you get a bid of 5s. or so below even your moderate ideas. It is no use, therefore, for planters or exporters at producing centres to lose their patience or to get angry with their agents, if the owner on the neighbouring estate has had his cocoa sold and you have not. It is pure luck. Even the question of quality is not the key to the trouble in all cases, for some very low Accras, I am told, have been purchased and shipped. Never was there a time, however, when it were wiser to ship the best quality that you can manage. Bahia has grown quite alive to this fact, as you will see later on.

And so I have to chronicle that during the three weeks ending November 6th only 762 bags of all growths have been landed in London, against 32,000 bags delivered and (14,000 for home consumption and 18,000 exported). I cannot agree, therefore, when I am told that the market is lifeless or flat, or that prices may go lower. It may be so elsewhere, but not in London. I simply tell the pessimists to hunt up the figures of the past few weeks or months and realize what satisfactory deliveries have been made. And instead of grumbling, to wish, as I do, that this increased demand and steady outflow may go on for as many more months as it has already existed in weeks. It is, after all, not so very far back to mid-August—only three months—and yet then we had 306,000 bags of cocoa in London, or over 60,000 more than on November 6th. Yet to-day people are every bit as "grumpy" as they were when there was some reason to be so.

Now we come to the stock figures on November 13th, which run as under:—

London Stock, November 13th.	1920 Bags	1919 Bags	1918 Bags	1913 Pre-war
Trinidads	32,893	30,445	17,277	11,462
Grenadas	24,865	14,680	7,678	2,540
Other W.I.	20,143	6,323	1,929	3,595
British African ...	17,934	20,010	34,458	5,333
Portuguese African ...	23	3,808	39,489	6,080
Cameroons	1,378	3,093	1,359	2,903
Ceylon and Java ...	19,039	6,547	9,787	11,847
Guayaquil	75,462	8,395	16,640	20,535
Bahia and Brazil ...	1,216	2,636	2,982	1,936
Other foreign	40,555	10,853	7,420	9,316
Totals	233,508	106,790	139,019	75,547

Against this, Havre ended up October with 37,000 bags less on hand than was the case at the end of September. Here are the figures. I give the prices as usual, but they are very nominal, especially in the present state of exchange:—

Havre's Stock, October 31st.	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará	7,354	198 to 213	16,869	205 to 215
Bahia	43,327	170 ,, 206	24,783	205 ,, 220
Venezuela ...	29,830	223 ,, 300	17,841	250 ,, 330
Trinidads ...	55,300	204 ,, 207	28,784	225 ,, 235
Grenada & O.W.I.	10	185 ,, 200	4,351	205 ,, 225
San Thomé ...	45,539	205 ,, 208[1]	39,799	215 ,, 220[1]
San Domingo ...	40,619	172 ,, 182	4,307	195 ,, 202
Haiti	36,838	150 ,, 185	16,184	168 ,, 188
Accras ...	36,623	160 ,, 164	71,240	188 ,, 193
Guayaquils ...	13,101	240 ,, 260	53,091	224 ,, 233
Others ...	29,916	—	3,370	—
Totals	...338,457 bags		280,619 bags	

[1] For superior.

Apart from the trouble of exchange, therefore, it might be said that the "health" of this market also is far better than it was. Of course, we still have the shortage of coal. France with little or none in some cases, and all having to pay very full prices for what they get. These troubles with the question of transport on the top of them still tend to check progress, but then, if with all these drawbacks we are what we are, it is just as well to look ahead and realize what we shall be when there are no impediments, whether cocoa, rubber, or any other tropical produce.

Bahia for one centre is realizing this, at least the leading firm of shippers over there is, for Messrs. F. Stevenson and Co., when sending us the following figures, said in their letters that much greater care is now being bestowed in the fermentation and drying of the cocoa, especially in Ilheus, the chief producing centre. Very little "fair," it is claimed, now comes to market from that centre, and so it is hoped to secure the orders that have been going to Accras through giving a better and more reliable article. If this centre can assure reliability in output, then there is no doubt that many who have tried the cocoa and left it, because of the uncertainty of the output, especially with fair, might be coaxed back to the growth again. I suppose the United Kingdom on the whole will never be a big buyer with our preferential tariff, but then there are other buyers, and even on this side we always take some. For instance, a quite recent arrival of the best grade of superior, sold almost on landing at 81s., the same price as Fine Trinidads, and the owner was not pleased even then. He expected more.

The full crop for 1919-1920 can now be given, thanks to our Bahia friends, and also the figure for this crop up to September, so far as receipts are concerned. Producers elsewhere should note these and realize what cocoa is out in the world to sell against theirs.

Bahia Movements—May-April

	1918-1919 Receipts	1918-1919 Exports	1919-1920 Receipts	1919-1920 Exports
	Bags	Bags	Bags	Bags
May-March ...	784,098	715,831	649,325	751,335
April ...	17,387	85,296	2,769	43,776
Total ...	801,485	801,127	652,094	795,111

In 1917-1918 these exports amounted to 750,817 bags, against 744,331 in 1916-1917, and 734,140 bags in 1915-1916.

Now we come to this season's crop figures, the total output of which, so far, seems likely to amount to about 800,000 bags, the same as with the two previous ones. This still leaves one wondering what stock of cocoa remains on hand over there. It cannot be much. No one claims that it is, and Messrs. Stevenson and others point out that, in spite of the heavy receipts, shipments have been equally heavy so as to leave but little or nothing to speak of on hand. The previous table shows that in 1918-1919 receipts and deliveries balanced, but last crop season pulled down whatever crop was left by 143,000 bags, which the movements from May-August in the following table sent somewhat the other way to the tune of 33,000 bags as shown.

Bahia Movements—

	1920 Receipts	1920 Exports	1919 Receipts	1919 Exports
	Bags	Bags	Bags	Bags
May	9,535	15,291	6,227	107,540
June	50,371	33,724	22,721	23,198
July	75,979	53,656	41,285	41,533
August ...	101,415	101,257	74,691	47,707
Total ..	237,300	203,928	144,924	219,978
Add September	125,869	114,429	112,078	94,829
Total ...	363,169	318,357	257,002	314,807

Writing on October 28th about the Bahia crop, Messrs. W. R. Grace and Co., of New York, reported that on account of the rumour of a large loan to the Brazilian Government by New York bankers and the position of coffee during the past week, the Bahia cocoa market has been very firm, with every tendency to advance in New York. This is due entirely to quotations from Brazil, and in no wise to the demand in America. At the last moment, however, a reaction seemed to have set in, and although this news will probably only put, therefore, some passing strength into the market generally, it certainly seems to have helped check any weakening for a time, which is something, especially as just at that time Accras were going very limp in New York, advices by cable speaking of only 38s. f.o.b. Accra.

I have no news as to whether this loan is actually agreed to, nor the amount, but there is no doubt that if it does come into being it will strengthen the price for Brazilian produce in all ways, at least for a time.

Whilst writing, London is much disturbed over the market depreciation of the European currencies on the one hand, and the further premium on the American dollar on the other. The one is the cause of the other, and we in the middle, through the Continent making its purchases *via* London, have to suffer for both. If the Continent were to buy direct from America, how much better would the £ sterling be, whatever further adverse effect such a policy would have on the European exchanges. One must suppose that it is to the interest of the United Kingdom to continue to shoulder the burden of Europe in this way, but since we, for our own use, have to buy so much from America, and pay to-day 480 halfpennies for goods worth about 335 halfpennies only, one cannot help wishing that a change could be introduced somewhere to avoid such a loss to the United Kingdom through being over-willing to help others.

The planter in the tropics, however, is happier to-day than he will be later on when Continental exchanges start falling and bring the United Kingdom relief. Then the Continental buyers will not want to operate, as they will know that each week, and even each day, will bring lower and lower figures, and so, the longer they can put off buying, the less will they have to pay in their own currency. Our readers must, therefore, be prepared for this and watch for it to come. At present there is but little sign of such an adjustment, but sooner or later it must come. At present, bad as exchanges are (say up to marks 310 in Berlin, 100 or 101 lira Italy, and fcs. 59.30 for France), they may go worse, and so buyers continue to operate, and will do so until a decisive turn in the tide sets in and it is felt that such rates have gone for good.

Thanks to Mr. Felix Camps of San Domingo, I can give the following very complete table of the San Domingo cocoa output—exclusive, that is, of anything from Hayti. As with Bahia, the wise men in this Republic are also answering Accra's challenge—Kaiser-like to dominate the world—by urging the planters to improve the quality of the cocoa exported, and above all to equalize its break, and so give assurance to the manufacturers that they will receive the bulk true to type. Mr. Camps is among the foremost of those working to this end. He now writes from Saleedo, R.D., that he hopes to see the wish to improve extend on all sides. Those who received the *Confectionery Journal* of London for November 4th and 18th will see that each of these contains an article on San Domingo and its cocoa based on the work Mr. Camps has done and the reports sent in. Coming now to the table mentioned, this shows a total output for the past year —August 15th, 1919, to August 15th, 1920, of 303,850 bags weighing 20,824,543 kilos, as compared with 21,479,915 kilos in 1918-1919. I have the returns of each district, but not the space to give them. I notice, however, that the weights given vary in the different areas, but go about 70 kilos to the bag on the whole. The biggest returns by districts include:—

	Bags	Kilos
San Francisco de Macoris ...	70,296	= 4,920,796
Moca	53,279	= 2,933,262
Saleedo	38,965	= 2,727,562
La Vega	33,269	= 2,328,867
Pimentel	22,835	= 1,598,468

Taking the crop by the provinces, the totals work out as under:—

Total cocoa output in San Domingo.

	Bags	Kilos
San Domingo	8,797	780,347
Pacificador	111,606	7,884,457
La Vega...	36,052	2,523,736
Espaillat	92,781	5,696,298
Santiago	13,738	1,021,787
Pto Plata	12,981	866,744
Samana	13,898	968,948
Seybo	13,997	1,083,226
Total	303,850	20,825,543

The Gold Coast, which had shipped 79,921 tons by the end of the half year, increased this by 17,858 tons to 97,779 tons as the total exports to the end of the third quarter (September 30th). It will thus be seen that the total exports this year, being obtained from the normal production of the twelve months covered, will be a long way behind the 176,176 tons shipped last year owing to the overflow from 1918 that had to be worked off. Take the average of those two years, however—121,000 tons—and you will probably find that this year's exports from the Gold Coast work out to much the same figure.

Lisbon received 22,374 bags in October and delivered 7,430 bags. Her stock, therefore, has been increased to 133,447 against 170,935 bags last year. Reports are rife that forced labour is having to be resorted to again. If this is true it does not promise well for the future of the industry over there.

I have plenty more to say about most quarters, but must close now with a note about the Board of Trade

returns for October, i.e., ten months out of the twelve, and then give you some discussion as to prices.

With regard to the October movements, they surprise us. During last month (i.e., four weeks ending October 30th) London received 3,003 bags against 22,931 last year, but she delivered 37,815 bags (18,684 for home consumption and 19,131 exported) against 32,974 (26,211 for home consumption and 6,763 exported), and yet, according to the Board of Trade returns, the whole of the United Kingdom received under 3,000 tons in October (against 5,600 last year), took into home consumption 3,500 against 7,500, or less than half, and exported 5,270 as against 6,753 tons in October, 1919. If these returns are correct, then London, who was so busy grumbling throughout October, must have done much better than Liverpool, otherwise how can you account for the ten months, showing 10,200 tons less taken into home consumption or 1,000 tons falling off per month, whilst the exports have increased 17,000 tons? Board of Trade returns for the United Kingdom:—

Board of Trade Returns for the U.K.—January-October.

	Landed	Del'd. H.C.	Export	Stock Oct. 31st
	Tons	Tons	Tons	Tons
1913 ...	29,107	23,057	5,859	9,050
1918 ...	25,913	51,319	583	17,450
1919 ...	107,240	52,622	18,734	55,100
1920 ...	99,600	42,425	35,439	63,450
	Decr. 7,640	Decr. 10,197	Incr. 16,705	Incr. 8,350

On the other hand, the business in foreign manufactured has increased, for during October we took into home consumption 1,476 tons as against 1,272 tons in 1919, whilst the ten months' total shows an increase of practically 100 per cent., say 11,435 tons for home consumption in 1920 as against 5,940 tons last year. How is this?

Coming now to prices, the week ending November 6th found Trinidads selling at 80s. to 82s. for the best marks, against only 69s. and 80s. for Jamaicas. Foreign growths were quite independent, but then to sell them was but a fluke, and the quantity available of what sold, viz., Bahias and San Thomé, enabled the holders to secure fancy prices, say 81s. for the first and 80s. for the second growth.

Since then public sales were held on November 16th, when just over 19,000 bags were offered. As under 500 bags were sold, it is unlikely that the experiment will be repeated this year. Some of the lots ultimately changed hands, and Liverpool had quite a good week with sales amounting to over 22,000 bags, but prices were lower, say up to 62s. or 62s. 6d. for good fermented Accras. London sold fine good red Trinidads at 82s. 6d. and 83s., whilst middling to good mid. is valued at 75s. to 81s. Grenadas continue needlessly low at 68s. for the best, St. Lucia and cheaper grades in proportion. Extra attractive Jamaica went at 70s. Guayaquil of old import has been selling at 84s., 88s., and 90s. Good bold Ceylon 142s. 6d., and fair bold 120s. Fine Venezuelan up to 155s.

Later news shows fine Grenadas to have touched 69s., but new crop Accras are 10s. below present spot prices; fear as to the out-turn is given as the reason of this.

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The Coming New Year.

HERE'S luck to our readers, no matter what their colour or creed, so long as they are workers, and not parasites or barnacles fastening and fattening on those who have the craze to work, whether the profits come to them or go to others—who do not deserve it. There are many of both these classes just now. The first are beneath contempt, but then opportunity attracts the barnacle. If it were not for the work-lunatics, the barnacles would have nothing to fasten on to and fatten from.

We prefer the doctrine of King Harriman II (W. Averill Harriman, the U.S. shipping magnate, only 30 years of age), son of Harriman I (Edward H. Harriman, the U.S. railway magnate), when he proclaimed (according to *Current Opinion*) that it is our duty to ascertain how each and all can do the utmost possible to develop the resources of their country along sound lines, and thereby provide useful, remunerative employment for all and not only for the closest of monopolies, the Trade Unionists that have almost developed into Anti-trade Unions. Thus do we claim that those who labour merely to fatten the slacker, be he an official or an artizan, are doing harm and no good to their country. To such folks we have no wish to send greetings for 1921.

Next Year's (1921) Exhibition and Congress.

WE have nothing new to report regarding the above. The rate of progress already outlined is being more than sustained, except in one direction. Those interested in cacao and vegetable oils are still far too backward in coming forward with the names of their papers and an outline of the subjects they wish to discuss. Mr. Knapp and Mr. Organ have sent in their particulars, so has Mr. Camps (San Domingo) and Mr. Ventress (Brazil), but the Philippines, Java, French Cochin-China, and our own tropical producing centres are all as dumb as the doorpost. Why is this? Because one's mind is occupied in delivering crops to contract time or in "raising the wind" to carry one over the year end, that is no excuse for neglecting the future, and besides, many of those who contribute papers to these Congresses are not traders but officials and experts, and it is especially these whom we are anxious to hear from.

We have offered a trophy for the best cocoa and chocolate-making machines, but it seems unlikely that such a competition can be arranged as there are so

many machines. Even if one particular machine were chosen, it seems difficult to decide what points for merit can be given. Perhaps some of the many makers of such machinery who are subscribers to TROPICAL LIFE can help us to arrange such a competition. One point about which there is no doubt lies in the need of all competitors to be exhibitors. No machine that is not shown as an exhibit would be eligible.

Economic Zoology.

Our Motto: "Utilization not Extermination."

WHAT ABOUT OUR TOADS AND FROGS?

THE whole of the *Philippine Journal of Science*, vol. xvi, No. 3, for March, 1920, has been wisely devoted to an unexpectedly interesting article for the man-in-the-street, although possibly there is nothing new in it to the man of science on the economic values of toads and frogs in those islands, of which the following extracts may be of use to our readers, especially if they live in a frog-infested area, as we have done in our time, and had frogs during the evening and far into the night, con-gu-la-ing incessantly after perhaps a twelve-hour spell of "coolie-music" from some tenement room during the day. Memories of such times make one take very kindly to the idea of slaughtering frogs for others to eat and of tanning their hides when dead to make up for your inability to do so with satisfaction to your feelings whilst they are alive.

Under the heading of "Philippine Amphibia," Mr. Edward H. Taylor, of the Bureau of Science out there, starts the journal mentioned above. These include the *Rana* or frog and toad family, about which we are told much that we had not heard of before.

The Philippines, it seems, are rich in amphibia, no less than 66 being discussed by Mr. Taylor, who tells us that there are probably another 20 to 25 more. Looking elsewhere, Borneo has about 80 known species, New Guinea 70, Sumatra 42, Java 47, Japan and Formosa together about 50. Many of these, we take it, are one and the same; one wonders, therefore, how many different species there are, because, since some have proved to be of considerable economic value, there may be others not yet exploited.

Certain species (of frogs and toads in the Philippines) are sold in the markets of the islands, besides large quantities which are caught and consumed without coming to the market. The catch, it is estimated, throughout the Philippines represents a food value of probably more than 500,000 pesos annually (peso = 50 cents, U.S. currency). Furthermore, it seems highly probable that this sum might easily be doubled if frogs were cultivated for market, for then their skins could be utilized for leather. This is done in Japan, France and the United States, where quantities of these skins are tanned and made into a fine soft leather, which is described in America as being thin and pliable with a delicate but not especially attractive grain. It is used principally for card cases and other small fancy articles. Two or three factories in France pay much attention to tanning these skins, which come in the raw state from northern Africa, Brazil and other tropical centres.

So much for their economic value as a raw material, now a word or two on the value of some of the species as an article of food. It is not generally known, or else people would not make such a joke about it in connection with France alone, that not only in that country, but also in America and Japan, there are large frog farms where the animals are regularly reared for market. Furthermore, these farms are said to be extremely profitable, their produce bringing fancy prices in the city markets. What fortunes, therefore, are running to waste in many a tropical centre, our own West Indian islands among them—running to waste and at times causing annoyance too. For table, only the hind legs are as a rule sold, and these are reported to sell at times as high as 10 pesos per dozen.

The species ordinarily cultivated in the United States is the bull-frog (*Rana catesbeiana*), which is the largest American species. Are these as large as those from Venezuela, of which, at one time, we had many stuffed specimens, made up, we believe, after the hind legs had been eaten? In the Philippines there are two or three species which attain large size, one at least of which, *Rana magna*, approaches in size to the American bull-frog. There is no doubt, Mr. Taylor claims, that these could be cultivated readily in the swamps and marshes of the Philippines, or even in paddy areas, provided that snakes and large lizards are not there to trouble them. The Rana family is the only amphibia providing species of value as food for man.

It must also be remembered that frogs and toads, especially in the tadpole stage, destroy many mosquitoes, particularly in the rainy season, which is the breeding season for the group. The adults can also be of use whilst alive, as they eat quantities of ants, flies, beetles and other insects. There is much more to be said on this interesting subject based on Mr. Taylor's exhaustive article, but space forbids.

THOSE who do not hesitate to acknowledge the value that education can be to help labour assist a country to expand and increase in influence and wealth and so maintain its position in the world (the only real object that wealth is worth fighting for) will have noted with pleasure that the son of an agricultural labourer at Harleston obtained at the end of his first year at Emmanuel College, Cambridge, a first class in Part I of the mathematical tripos, and that a Welsh coal-pit hewer passed through Bangor University, where he obtained his B.A. with honours. Let both these men "stick to their lasts," the first to agriculture and the second to mining, and it must follow that they could do much better in the end, because of the thorough education as well as the practical knowledge at their disposal. Boys and men in the tropics will benefit in the same way if they stick to the work (as a rule) in which they have already had experience, and which they can then elevate and advance because of the scientific training that they will bring in and add to the equally useful gift of practical knowledge.

Vegetable Oil Notes.

The Investigation of Oily Produce from Oil-palms.

The following particulars on p. 10 of the 1919 report of the Agricultural Department of Southern Nigeria will help those who have been inquiring about the distance at which oil-palms should be planted to give best results to arrive at some conclusion. To plant 30 ft. by 30 ft. (40 to the acre) is good for coconuts, but wasteful for oil-palms; even 24 ft. by 30 ft. strikes us as being so unless circumstances are exceptional. Here we have 20 ft. by 20 ft., or 108 to the acre, whilst 20 ft. by 24 ft. = 98 and 24 ft. by 24 ft. = 75 palms to the acre. Those on the spot, however, must ascertain which distance is best. In the old days, I believe only 100 palms to the hectare were planted in the Cameroons, and if so, that means only 40 palms to the acre, or 30 ft. by 30 ft. apart.

This work was continued, the purpose being to find the actual yields of fruits, nuts, kernels and pericarp oil, and to ascertain the values of such numerical relations as exist between them; as well as to compare the yields of such produce from old, wild palms with those from young, cultivated palms. The ordinary, native way of extracting the oil was employed; and this means that, although the method gives results that are of interest as showing what can be obtained from the oil palm under ordinary circumstances, it is not such as affords a means of accurate numerical comparison; this inaccuracy should be thoroughly recognized when any attempt is made to draw conclusions from the results or to use them for comparison. The results obtained so far, from observations and extractions throughout the year, are as follows:—

Plot and Year.	No. of collections	No. of bunches collected	Weight of bunches, lb.	Weight of fruit in bunches, lb.	Per cent. weight of fruits in bunches	Weight of nuts obtained, lb.	Per cent. weight of nuts in fruits	Weight of kernels obtained, lb.	Per cent weight of kernels in nuts	Weight of oil obtained, lb.	Per cent weight of pericarp oil in fruits
Column 1	2	3	4	5	6	7	8	9	10	11	12
1 acre enclosure of wild palms ... ... (1918	15	265	5,671	3,370	59·4	1,871	55·5	396·3	21·2	187·80	5·6
(1919	6	151	3,017	1,513	50·1	811	53·6	199·0	24·5	87·07	5·8
1 acre of palms planted 20 ft. by 20 ft. in 1918 ... (1918	12	99	2,369·5	1,476	62·3	803·1	55·1	175·4	21·8	79·67	5·4
(1919	5	248	558	299	53·6	146·0	48·8	29·0	19·9	13·63	4·6

These figures are largely irregular in the case of the young palms; for instance, column (8) indicates that the amount of pericarp in the fruits has very sensibly increased, and yet column (12) would lead to the conclusion that this increase has been accompanied by a large decrease in the amount of pericarp oil present; as is stated above, a more accurate means of extraction is wanted, in order that results for useful comparison may be obtained. There is nothing of importance in the figures in columns (4) and (6), for the weight of a bunch of fruits depends very largely upon the wetness or dryness of the weather when the collection is made.

The Castor-oil Industry.

In their September (1920) list of publications, the Chief of the Division of Publications, Department of Agriculture at Washington, D.C., tells us that *Department Bulletin*, No. 867, discusses "The Castor-oil Industry," and costs 10 cents, or possibly sixpence (if not more at present rate of exchange) with postage.

This pamphlet which covers 40 pages, and has 15 figures or illustrations, discusses the source of, trade and commerce in, and inspection and valuation of castor beans, as well as the manufacture, properties, and uses of castor oil. It is written by Mr. J. H. Shrader, formerly Chemical Technologist, Office of Drug, Poisonous and Oil-plant Investigations, and was originally contributed to the Bureau of Plant Industry. Those interested in castor-oil production and trading should be glad to meet this pamphlet.

The (London) Advertising Exhibition.

In these days, when there is so much talk about developing the trade of the Empire and so many highly paid officials to bring this about (far too many, and the broth is neglected and spoiled, as with too many cooks), the quiet, useful and remunerative work being done in India by the firm of Tata is pleasant to hear of and then to think about. Wandering round the Overseas Trade Section we came across a long row of well-groomed men (and it costs money to be immaculate in these days), each seated comfortably in a chair watching the crowd go by and—doing nothing. Going with the crowd, we were carried along wondering why the general public went to such a show, since very few stopped to look at anything. When we tried to do so two women complained of their progress being checked. "Why stop here," they indignantly demanded, "when the crush is so bad?" Suddenly we noticed the word Tata, and in two minutes more, still going with the stream that flowed to nowhere in particular (unless it was towards the Lucky Tub), we were noting the list of concerns controlled by the Tata group shown on p. 180.

And so, when all the concerns are included—for we are not experts on India's enterprise—the enormous sum of about forty million sterling must be the authorized capital of all these companies, or just half of the value of the Lever concerns over here. Is the Tata family the only group able or willing to

advance the prosperity and hence the happiness of India by stimulating enterprise on such lines?

	Capital in rupees.
Tata Iron and Steel Co. Ltd.	10 Crores
Tata Oil Mills Ltd.	1 ,,
Sugar Corporation of India Ltd.	5 ,,
Hydro-Electric Power Supply Co. Ltd.	3 ,,
Tata Construction Co. Ltd.	2 ,,
New India Assurance Co. Ltd. (nearly)	2 ,,
Tata Industrial Bank	12 ,,
Nine other concerns (about)	5 ,,
Crore = £1,000,000. In all (about) ...	40 Crores

By the bye, *we* got a twin tablet of soap out of the Lucky Tub worth 8d. retail, and as we paid only a shilling to go in, including the Government tax, we quite agree that the cost of entry was returned to us. There were 100,000 such presents to be given away. We honestly believe that this large quantity was considered to have been more than adequate for the entire week, but every one had gone by the end of the second day, i.e., 50,000 were given out each day. Such is success and fame you get and give more than you reckon on sometimes—but all this showed how the public will crowd in when they think they are getting something for nothing. With rubber, tea, cacao, sugar, cotton, &c., all at such "appallingly low prices," why not use up a small portion of to-day's surplus (and call in some unemployed to help) in making similar gifts to present to visitors at the Rubber and Tropical Exhibition next June? You might get rid of a quarter-million such presents. Think of the big advertisement at quite a low cost.

The Oil-palm in Malaya.

Following up what we said last month, p. 166 (and the notes published on p. 187 in this issue on the need of distributing the agricultural eggs in Malaya), on the encouragement or discouragement of oil-palm planting in the F.M.S., we see with pleasure that Mr. C. C. Malet recently contributed some useful notes on the cultivation of this useful and profitable palm over there (see the *Malayan Tin and Rubber Journal*, Kuala Lumpur, vol. x, No. 14, or the *Tropical Agriculturist* of Ceylon for October, pp. 204-208). Here are given details as to yield per palm, per bunch, and from the pericarp and kernel, and, through that, per acre. Planting and cost of production are discussed whereby an estate of 3,000 acres (48 trees to acre = 30 ft. by 30 ft.) in more or less full bearing, should cost (ex-estate, meaning, we take it, exclusive of land, buildings, &c., and so only for clearing planting and upkeep) about $200 per acre per year ($ = 2s. 4d. nom.).

Crops should commence in the fourth year, with numerous small bunches before that, but with smaller fruits. We would suggest cutting these out so as to throw more vigour into the tree—as with very young cacao—later on. Out of 48 trees per acre, possibly 10 per cent. or five per acre will turn out to be male trees and no use for crops. The final sum-up is very rosy, but as we are not sure whether this is when the estate is seven or fourteen years old, we will leave our readers to study the originals.

Copra per ton—Spot.

	London F.M.S.	Ceylon	Marseilles F.M.	Hamburg and Rotterdam. F.M.S.
	£ s. d.	£ s.	£ s.	£ s.
Dec. 18 ...	35 10 0 to 36 0 0	37 10	N/Q	37 10*
,, 15 ...	44 10 0 ,, 45 10 0	45 0	,,	45 0*
,, 14 ...	45 10 0 ,, 47 5 0	47 0	,,	47 10*
,, 11 ...	46 10 0 ,, 47 10 0	47 10	,,	50 0*
,, 4 ...	47 10 0 ,, 48 0 0	48 15	,,	50 0*

Coconut Oil per ton.

	Ceylon Spot	Ceylon For shipment	Cochin Spot	Cochin For shipment
	£ s.	£ s.	£ s.	£ s.
Dec. 18 ...	85 0 ...	70 0 ...	98 0 to 100 0 ...	75 0
,, 15 ...	85 0 ...	79 0 ...	98 0 ,, 100 0 ...	81 0
,, 14 ...	85 0 ...	80 0 ...	98 0 ,, 100 0 ...	83 0
,, 11 ...	85 0 ...	80 0 ...	98 0 ,, 100 0 ...	83 0
,, 4 ...	90 0 ...	82 10 ...	— — ...	85 0

Other Oils per ton.

	Castor Firsts	Ground-nut Crude†	Palm kernel Crude Hull spot	Cotton seed Crude Egypt
	£	£	£	£
Dec. 18 ...	65 ...	55 ...	N/Q ...	45
,, 15 ...	65 ...	60† ...	,, ...	45
,, 14 ...	65 ...	65† ...	,, ...	45
,, 11 ...	65 ...	65 ...	,, ...	45
,, 4 ...	68 ...	60‡ ...	,, ...	48

* Rotterdam only. Hamburg not quoted. † English crushed, naked.
‡ Oriental in cases afloat. N/Q—No quotations.

Rubber and Cotton Notes.

Asphalt v. Rubber Pavements.

The report that Messrs. Selfridge, Ltd., are laying down a portion of pavement in rubber as a trial to see —we hope—whether it would not prove beneficial to increase their frontage under this most pleasant of walking surfaces (next to sward grass) leads one to wonder how the cost of such a (rubber) pavement with the best raw material under 1s. lb. for the best would compare, comfort for cost, with asphalt pavement. The last can also be produced within the Empire if Trinidad pitch or asphalt were used instead of the Swiss rival. If America has laid hundreds of miles of roadways and pavements, &c., with Trinidad pitch, one cannot help wondering why we persist in going outside the Empire for what we use. Cuba has asphalt deposits, in the provinces of Havana and Sta Clara, and so has Nicaragua; but the pitch from these deposits are far behind that from our own island, and so there is really no need to go to Switzerland for supplies. Better go out East and bring home a ship-load or two of the surplus raw rubber stocks—put at a quarter million tons, taking the big centres together —and use that, since the usual channels of trade seem unable to dispose of the stuff in manufactured form. We discuss in our leading article the lack of our ability to sell rubber or any other goods just now.

Latin America, its Rubber and Trade.

There are those who claim that it is a pity to let the Amazon rubber industry go to the wall because the countries and districts over there which could send us rubber, if it paid them to do so, offer such marvellous possibilities for trade in return. The United States, we are reminded, have taken due note of this, calculating, that whatever number China and India

may boast in the way of millions of potential buyers (who at even 5s. per head per annum mean a huge turnover), the Far East elsewhere does not altogether outweigh Brazil alone in importance, especially if allowance is made for what Brazil would be as a customer were her resources developed, we will not not say like Ceylon's, but like Malaya's. The total population of Latin America as a whole (of which, of course, the important rubber-yielding areas are a very small but potentially an important portion) is estimated to be 75,000,000, or between one twenty-second and one twenty-third of the total population of the whole world. The United Staes think a great deal of Latin America as a trade centre already, but in twenty years it will—with a little luck—be far more important still. Germany before the war, and the hyphenated German to this day, has drawn unknown wealth from those Republics, possibly more so than North America even. "Our world-commerce," said one of the American banks recently, "totalled nearly twelve billion dollars in 1919, of which Latin America contributed one-sixth. This being so, if the whole world had, in 1919, done as much business with us as did Latin America, the world-commerce of the United States would have been forty-five billion dollars instead of only a dozen." So much for the U.S.A., but what of ourselves and the British Empire? What small percentage of this immense annual wealth, far beyond anything thought of by the Spaniards of old, comes our way—we who have or had over a thousand millions invested out there, without the help of which the wealth that has gone to Germany and America would never have been let loose and become available?

Garage Appliances for the Tropics.

Now that motors, passenger and transport, are to be met everywhere in the tropics, Messrs. Hollings and Guest, Ltd., of Birmingham, have asked us to call attention to their new List A. III. of Hydraulic Presses for fixing and removing solid rubber tyres from commercial and other vehicles. Page 4 is devoted to a diagrammatic index, explaining the component parts of the machine and the order of erection, so as to make it quite simple for any garage owner to erect the Press in the quickest and most suitable way. Particulars are also included of the small concrete foundations which are generally provided, although the Press is quite steady and workable without any special foundations. A small concrete bed, however, is usually got out to receive the base of the appliance.

Low Prices must not cause Estates to be Neglected.

San Thomé is not the only centre where increased costs *v.* less labour and lower prices tends to reduce the vitality of the crop-trees, thereby reducing the yield through lack of sufficient cultivation and manuring, &c., whilst the trees are no longer able to keep free of pests and diseases which the absence of the pruner or spraying machine enable to gather round in ever increasing quantities. It is the same with tea in India and Ceylon, with rubber in Ceylon or Malaya. Sugar-cane has its enemy in the frog-hopper, and cotton in the cotton-stainer and boll weavil. All are in the same boat, and until adequate manuring can be carried out and the vigour of all trees and crop-yielding plants built up, this must continue. If you cannot manure, for financial or other reasons, then spray as much as you can. In any case see that badly diseased portions are removed and burnt (not left on the ground), and so do what you can until you can do all you should.

Rubber estates, the *Tropical Agriculturist* points out, are not at present faced with the same difficulties as tea, but for all that we feel that they have the Brown Bast trouble, not to mention anything else, and the present serious depression in the price of their crop, as well as the over small sales at any figure, will tend to make it all the more difficult to keep up cultivation, especially on those (surely mistaken) estates whose chairmen are telling the shareholders how freely they have reduced the labour staffs. The price of coconut products has been fairly good, it still shows a profit, so here expenditure on manuring, pest-extermination, and cultivation generally can well be afforded, and should be undertaken at once before lean times come. Where increased use has been made of manure on coconut estates, this has been done with benefit to the trees and profit to the planter.

We are glad to see that our Ceylon contemporary speaks up for the use of tractors under the palms. If ever the use of these were justified—some still maintain, as with explosives, that their use is too costly—it would be on a coconut or oil-palm plantation, where there is plenty of room; also more need, on that account, to cultivate. "Tractors are receiving increasing attention on coconut estates," the *T. A.* tells us, "and for certain cultivation operations have been found, in many instances, to be suitable and economical."

Messrs Lloyd, Matheson and Carritt's Report.

This week, ending December 16th, quotations ruled as follows:—

Spot quotations—	1920 Dec. 16th. s. d.	1920 9th. s. d.	1919 6th. s. d.
Smoked sheet (F.A.Q.) ...	11	11½	2 6¼
Crêpe (standard quality) ...	1 0	1 0½	2 6¼
Parà	1 1½	1 4¾	2 6¼

Forward positions—	Smoked Sheet s. d.	Crepe s. d.
1920, December	11	1 0
1921, January	11¼	1 0¼
,, January—March	11½	1 0¾
,, January—June	1 0¼	1 1¼

Stocks—		Tons		Tons
Plantation, London	.. Dec. 14th, 1920,	47,891	... Dec. 1st, 1919,	24,122
Parà, Liverpool	... ,, 1st, ,,	710	... ,, ,,	570
	Total	48,601	Total	24,692

Since the above table was drawn up prices fell further, on the whole being more adverse to Pará than to plantation, although neither have any cause to laugh, but congratulations are due to "the Lane" on the way it has weathered the storm.

Colombian Pita Fibre.—Part I.

By M. T. Dawe, F.L.S.

The Pita fibre of Colombia and other adjacent South and Central American Republics, although of considerable importance in the localities where it grows, is practically unknown to the world of commerce, except for a casual parcel sent to fibre merchants and manufacturers by travellers who, having come across the plant in their wanderings and impressed by the high qualities of the fibre, have collected and forwarded samples. Pita, it may be mentioned, is a very elastic term in Central and South American countries, as it may be used to denote sisal hemp and other fibre plants, as well as cord or string. The Colombian Pita plant is, however, not in any way related to the sisal hemp plant, it being a species of Ananas—a kind of wild pineapple. It has hitherto been thought that this was *Ananas macrodontes* Morren, but recent examination at the Royal Botanic Gardens, Kew, of material collected by the writer in Colombia, proves the Colombian plant to be quite distinct from this species. Steps have been taken to procure further botanical material of the plant, and when this has been received it is hoped that its botanical identity will be definitely established.

Description of the Plant.

The Pita plant, as will be seen from the accompanying illustration (fig 1), very much resembles the pineapple; in fact, it might be very appropriately described as a giant pineapple plant. A single mature plant carries from 20 to 40 leaves, which attain a length of 10 ft. or more, and are about 4 in. broad in the centre. They are convolute towards the base, otherwise flat and tapering towards the apex. The margins are toothed, and from the middle to the base the teeth turn downwards, and in the upper half upwards. The flowers are produced in pineapple-like heads, which are borne singly, or more usually in groups of two or three, and are about 9 in. long and 4½ in. broad; these differ from the ordinary pineapple fruits in having conspicuous rose-coloured bracts, as will be shown in an illustration next month. The flowers are blue and fugitive.

Fruiting is irregular, and the seed is not commonly the means of propagation. The plant throws out stolens underground and young plants or suckers come up all around it. So strong is its reproduction by this method, and the growth of the plant so vigorous, that it takes entire possession of the land to the exclusion of other forms of undergrowth vegetation, excepting trees and palms which afford the shade necessary for its growth. It therefore forms impenetrable masses which cover extensive areas, which so much resemble plantations that the Colombians call them "pitales."

Occurrence of "Pitales."

Pita is a shade-loving plant, and is usually found in the shade of the tropical forests as undergrowth. The type of forest in which the plant occurs is shown in Part II, which is of the Chiriguaná forest, famed throughout Colombia for its extensive "pitales." An interior view of this forest will be shown later, and this indicates the density in which the Pita plant grows to the exclusion of other vegetation, entirely covering the land league after league. It is impossible to penetrate these forests except by hacking a way through by a *machete* or cutlass. The plant flourishes in light sandy soil, but will not grow in wet land or on land subject to frequent inundation. Pita lands are therefore generally healthy, and the forests are usually well watered by clear flowing streams from the Cordilleras. It is generally believed that the Pita plant will not grow in the open exposed to the sun; this is, however, erroneous, as the writer has seen the plant growing luxuriantly in various parts of Colombia in open land. It may be true that the plant will not thrive in the open in the tropical regions, as where the plant has been observed in the open it has, in every case, been in the sub-tropical parts of the country. An illustration of Pita growing in open land as a hedge plant in the Department of Caldas will be given in January, from which it will be noted that it does not grow any less vigorously than it does in the shade of the tropical forests.

The Pita plant is found in different parts of Colombia, from practically sea-level to nearly 3,000 ft. above. It is, however, more usually found in patches, and not generally covering large areas as at Chiri-

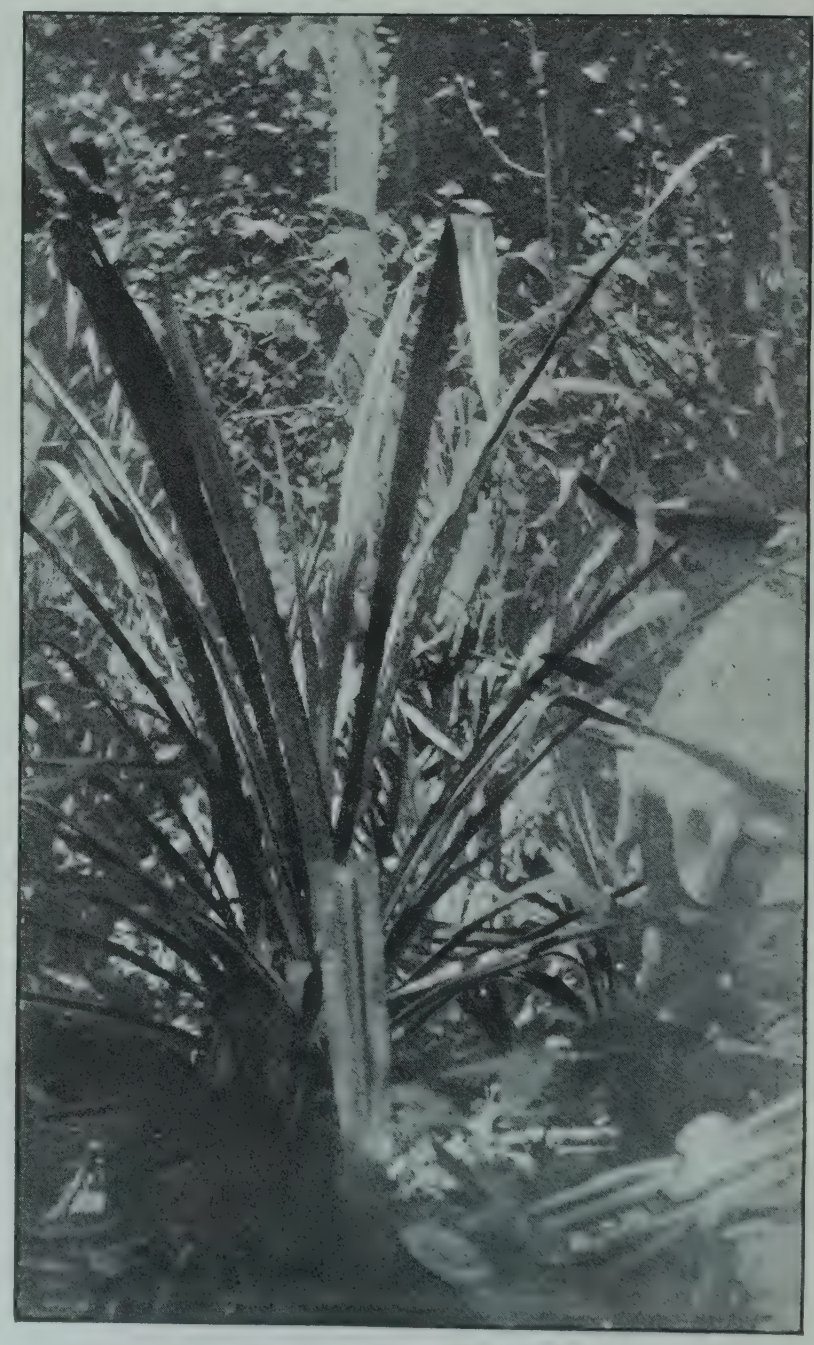

Fig. 1.—A Pita Plant.

guaná, except in a few other localities, such as the Carare, Atrato, etc. From the manner in which one finds the plant growing in the interior of Colombia in clumps or patches, it is not improbable that it was at one time cultivated or conserved by the indigenous Indians, who from time immemorial have prized the fibre which it affords for its great strength and durability.

Native Method of Extracting the Fibre.

The native extracts the fibre by placing a single leaf on a flattened log of wood, and holding one end of the leaf with his foot, by means of a long stick with a flattened end he scutches away the waste material of the leaf till only the clean fibre remains. This is, of course, a wasteful method of extracting the fibre, as it is only partially recovered by this means. It is, further, a slow process, and impracticable from a commercial point of view.

Its Uses.

The Pita fibre is valued by the Colombians as being the strongest and most durable of its class, and is employed by them for all purposes where strength and durability are required. The Cæsar river, in the watershed of which Chiriguaná lies, together with its extensive lakes and lagoons, forms an important fishing region, and large quantities of Pita fibre are employed in this locality in the manufacture of fishing nets.

It is also used waxed by local shoemakers, instead of thread for sewing boots, etc. In Mexico the fibre was formerly used for strings of musical instruments, for fancy needlework, and waxed for saddlery and leather work.

Commercially it would be classed as a hard fibre, and would enter into competition chiefly with henequen or sisal hemp for ropes and for use as binder twine in harvesting, though it is finer, stronger and superior to the fibres mentioned, and really too good to be employed for binder twine.

Experiments have been made with the view to its use, mercerized, as a substitute for silk and for the manufacture of cloth, with promising results. For such applications it would, of course, realize much higher prices than if used in competition with sisal hemp.

Commercial Valuation of the Fibre.

A sample of the hand-prepared fibre from the Chiriguaná "pitales" was forwarded by the writer in 1918 to the Imperial Institute, London, for examination, and the following is the result of this chemical examination and the report received:—

	Per cent.
Moisture	9·8
Expressed on the dry fibre:	
Ash	0·6
a-hydrolysis, loss	12·6
b-hydrolysis, loss	16·8
Acid purification, loss	2·7
Loss on washing in water	2·1
Cellulose	74·7

Length of ultimate fibres: from 1·7 to 6·1 mm.; mostly from 3·0 to 4·2 mm.

"The sample consisted of clean, well-prepared, soft, lustrous fibre of pale straw tint. The fibre possessed good strength, and varied from 8½ ft. to 10½ ft. in length."

Commercial experts who reported on the value of this fibre for the Imperial Institute stated that it was somewhat similar to sisal hemp obtained from *Agave cantala* in the Philippines and the Dutch East Indies, and that the strands were fairly fine, of good strength, and thoroughly well decorticated. They considered that this fibre could be used as a substitute for sisal hemp, manila hemp, or other hard fibres, and they valued it at the current Government maximum price for such fibres, i.e., £99 to £100 per ton (May, 1918), adding that the pre-war value would have been from £28 to £30 per ton.

In January of 1917 a sample of the fibre was submitted to the Fibre Expert of the United States Department of Agriculture, whose report will be included in Part II in our January issue. We regret not being able to publish the complete article this month.

Fig. 6.—The Fibre of the Pita Plant.

(To be concluded in our January issue.)

Tropical Life "Friend."—No. 186.

MR. NOËL DEERR.

The Sugar Expert.

IN a little-known restaurant that is always crowded because the fodder is good, three guests sat down to lunch, two talked and ate and the third one looked wise and only thought—being a black cat. It sat on the chair at the side of "Our Friend" whom it had never seen before, and we, watching the two, feel glad for the future of sugar production in India. A man whom a black cat will take to at sight is sure to be reliable. We want such a man to push on the production and manufacture of sugar in India, and when we heard that Mr. Noël Deerr had seen fit to vacate the important position he was holding as Superintendent of the Arbuckle Refinery at Brooklyn, N.Y., to join the Tata concern (about which we had so much to say in our August, July and other issues) known as The India Sugar Corporation, then we felt satisfied—for once in our lives, and now, after the lunch, we are more sure than ever. We may yet see India exporting sugar, that is to say, exporting more sugar than she imports. "Our Friend" is not a talker: you have trouble to extract the barest facts out of him, but he is a demon to work. We should like to see him at it in India—after all we have had told us about that Empire being no good as a supplier of sugar to the outside world.

Mr. Deerr is much younger than we are, so has at least twenty years ahead of him to make things in India hum, for he was born in 1874, at Keresley, Warwickshire, when his father, the Rev. George Deerr, who by the way was born in India, was vicar of that parish.

A classic in the sugar world to day like "Our Friend" and his great twin brother (classic), Prinsen Geerlig, must know mathematics like the alphabet. When the two-guinea book by Mr. Deerr makes its bow to the public, which it will do soon, you will understand why. Dr. Geerlig's books will remove any further doubt. We started once to study sugar extraction and began, wisely, at the bottom, viz.: by inserting a piece of scantling into a square hole in a tree and inserting the cane under it, brought considerable pressure on the cane, whereby the sugar flowed freely and we felt that we were making good progress. When however we retired indoors to study one of Dr. Geerlig's, or it may have been Mr. Deerr's books, to see what the next stage was, and found it nothing but a mass of algebraical calculations we retired from the profession and have remained out of it ever since. Those however who mean to persevere must remember that it is absolutely necessary in these days to perfect yourself at mathematics if you want to do any good as a sugar expert financially or otherwise.

"Our Friend's" career is a good example of what has to be done, and the comparatively short time it takes to do it when you realize the height reached in this case.*

In 1896, "Our Friend" secured his A.C.G.I. in Applied Chemistry which he converted into the F.C.G.I. fifteen years later—in 1911. From 1896-1900, he was working with the Colonial Co. (planters and factory owners) in Demerara, as their chemist at Windsor Forest and Albion Estate, finally becoming factory manager at the latter. The next two or three years found him with the Mauritius Estates and Assets Co., then he went to Demerara for two years with Messrs. H. K. Davson & Co. When we first came to know "Our Friend," he was sugar technologist to the Hawaii Sugar Planters' Association, a post which he held (with great profit to the Association) from 1905-1914, until we began to think he had taken root there. If he did however, he was dragged out, for in 1914 he was at work under the Cuban Government, which no doubt also benefited by his assistance, whilst he certainly did not benefit by their hospitality, as during the insurrection of 1917 his extensive and valuable library of books on sugar was burnt, and many old editions, practically impossible to replace, destroyed, with the latest works, that still cost money but could be bought over again. These, by no means little tragedies, come very hard to such men; we are painfully aware of how we should feel if such a fate overtook us with our accumulation—none of which are irreplaceable.

From 1917 until now, Mr. Deerr has been with that old established and probably best-known of all American refineries, Messrs. Arbuckle Bros., which he left but two months ago to join the India Sugar Corporation. We wish both the Corporation and Mr. Deerr all success in every way possible.

In marrying in 1912 the fourth daughter (Rhoda) of Mr. Charles Watson, who, it may be remembered, was for many years London manager of the Mirrlees Watson Co., "Our Friend" still keeps in the line that leads to success, if it is true that the shoemaker should stick to his last.

Those who have followed the literature dealing with sugar during the course of this century will know that the contributions to the list by "Our Friend" are as numerous as they are important. We are aware of a score and a half which have appeared in *The International Sugar Journal* alone, as well as eight or nine more which we cannot fix, whilst other articles have been published by the *Louisiana Planter*, &c., and well over a dozen as *Bulletins*, issued by the Experiment Station of the Hawaii Sugar Planters' Association.

* With the great need that the world has to-day for real cotton growing experts one wonders a training similar to that for sugar is not open for students interested in cotton.

Business Notices.

1.—The address of Tropical Life is Messrs. Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, London, W.

2.—All **literary communications** should be addressed **to the Editor,** and accompanied by the necessary stamps for their return if not accepted.

3.—All **business communications and payments**, either for subscriptions or advertisements, should be sent **to the Publishers** of Tropical Life. Cheques to be crossed The Union of London and Smiths Bank, Ltd.

4.—The Subscription, which is **Twenty Shillings** per annum, may commence at any time, and is payable in advance. Life Subscription, £10.

5.—The Advertisement Department is at 112, Fenchurch Street, E.C., where all inquiries respecting advertisements, charges, &c., should be addressed c/o the Manager of the Department. At the same time will advertisers kindly note that all copy and blocks for advertisements must be sent to 112, Fenchurch Street, E.C., before the thirteenth of each month, failing which, insertion of same in current month cannot be guaranteed.

6.—The Publishers reserve the right of refusing any advertisement, or the matter or "copy" sent in for any advertisement. They would also be glad if advertisers would refrain from using the "powerful" or extra heavy type that some adopt at times. Doing so renders the paper unsightly, and is unfair to the other advertisers as well as to ourselves. If all used such type, no one would benefit; to allow some to do so and not others, would be unfair.

7.—Advertisers are only entitled to three changes of matter in the year of twelve issues, unless (1) they send electros for insertion, or (2) are willing to pay for the cost of setting up the advertisement. Owing to present high cost of composition and printing work we cannot depart from this rule.

8.—Changes of address should be promptly notified.

9.—Non-receipt of copies of the Journal should be notified to the Publishers.

10.—The Journal will be issued on or about the twentieth of the month.

The Managing Director and Editor of "Tropical Life" will be pleased to consider the printing and publishing of useful technical works on Tropical Agriculture, Medicine, or other subjects dealing with the development of our Colonies and the Tropics generally, as well as similar books dealing with Russia, Japan and the East, whether the books are to be published in English or other languages.

Tropical Life.

December, 1920.

Are the Profiteers Ruining the Planters?

Is Tolstoy's Warning to the Czar in 1904 applicable to Democracy To-day?

The other evening found us sitting in Kingsway Hall waiting. We had an hour to kill, but it went more quickly than we wished. There was so much to see and think of in the faces of those flocking in and filling up the large hall until some even were standing. Most of those who attracted our attention would never have been mistaken for English, whether heavy-faced men or vivacious brunettes with sallow complexions. One watched them coming and going as they tried to find a vacant seat. Whilst doing so you wondered how one could most correctly gauge the temperament and psychology of such people—who hailed from Russia.

The meeting had been called—with the barest of notice and yet was so crowded—to commemorate the anniversary of the death of Leo Tolstoy just ten years and ten days before, and each one present figured in our mind as representing potential customers for tropical produce as just before the war and the revolution, when Russia was beginning to take such goods on a more popular basis than in the 'nineties. Given a fair amount of political progress and no war or revolution, then it is easy to realize what a buyer of tropical produce Russia would have been by now, just when the tropics needed such help to move off their surplus stocks. Some day—in truth, to be best translated as *mañana*—a new Russia will come into her own—it may be in five, it may be in ten years' time. Then, with a new Germany (where sales will never be checked by over-high prices nor by trade-union rates of wages), Republic or otherwise, the two—Russia and Germany—will be the great twin buyers of the world, leaving even America behind perhaps, after their long fast and renewed life, with every modern improvement for the rapid and cheap production of manufactured wares. Germany will see to this latter point, of that the world can be sure, whether in Russia or throughout Central Europe, and the speeches began whilst we were thinking of this.

Mr. Bernard Shaw, the first speaker, diverted our thoughts. He generally does, we fancy, with most of those facing him. We forgot these potential buyers around us in thinking of the shameless crowd of entirely English profiteers that are holding up the trade of this country either by reducing production or checking the sales through over-high prices or reduced spending capacity, thanks to the onerous local rates or Imperial taxes. And yet how cheaply we could buy to-day if only allowed to. What mountains of raw materials would disappear in a few weeks if sold in the manufactured form on the basis of present prices for the raw material, 1s. per lb. for rubber, 10d. for cotton, 5 cents for Cuban sugar against 23 or 25 cents, and so on right through the list. Everything to-day (except Bovril and margarine perhaps) could be at least 50 per cent. lower, and often one-fourth of the present prices asked. No wonder demand falls off; no wonder the planter in the tropics, who sends us these necessities, is growing more and more anxious over his future. Whilst they have been working to give us an output large enough to cope with and satisfy the estimated, normal, post-war Russian-cum-German and Central European demand, owing to circumstances entirely unexpected by everyone when these increased crops were being arranged some years back, the planters have not only got the Russo-German share left on their hands, but they must realize that their own people—deliberately or otherwise—are apparently doing everything to ruin them. Production is checked, sales to the public are checked. But costs are put up and are still rising, and no one seems—in the United Kingdom—to want them to fall—that is, no one but the ordinary householder who is neither in Government nor municipal pay, nor a contractor, manufacturer, distributor, or attached to a trade union. There is still quite a number who do not come under any of these heads. There must, of course, be many millions of us, otherwise so large an army of profiteers, money-wasters, and killers of trade could not afford to live (on us) as

they have done, they are doing, and as they mean to do for as long as possible. What happens to the planters and the rest of the public is not their concern. And so, when you take stock, we have coal at nearly 65s. per ton instead of 24s., and cotton spinners, as we showed in a past number, have been earning enormous dividends, in one case over 500 per cent. How can consumption be increased at this rate? With raw cotton, as with sugar, the supply is behind the demand at normally fair prices, but not at present retail rates. With other crops—rubber, coffee, cacao, tea, &c.—the supply, thanks to the distributors, is miles ahead of the demand because the public, knowing that they are being fleeced, will not buy more than is absolutely necessary. Only profiteers, Labour men, Governmental and municipal employees (and all come under one head, since the moment they strike or complain, their pay has been adjusted to meet the higher cost of living) buy willingly and freely. What does this mean? It means that sales are 20 per cent., and perhaps in some cases 50 per cent., below what they would be were the prices asked reasonable and fair, and were the shops, especially the local retail shops, willing to push sales and encourage trade as before the war, and it is this 20 to 50 per cent. extra trade which could and would have eaten up our excess stocks everywhere, and even leave us clamouring for more. To-day what the traders are doing is causing exactly the opposite to happen, i.e., to force stocks to increase week by week. Shortage of shops, as of houses generally, keeps competition down. Without a union, as with Labour, the retailers seem united in their ideas of how to make profits with the least trouble and risk. To do this sales are not pushed; you buy if you like, you do not buy if you do not like,* they do not trouble. And so sales are kept low and prices rule high, and no one knows where or what the end will be. Meanwhile, not only is the raw material running to waste, but also the labour that could be and should be employed making it into goods and selling it to the public. Some say the trade unions, a close body—worse than the sellers' ring—will allow no newcomers, as they will pull down profits and so must be kept out. If this is in any way true, all the more shame to Labour. France is dealing out heavy fines and long terms of imprisonment to her profiteers and those who are stopping trade. We seem to have so many, and some are so strong, that such a policy is not possible here. There is the Government flannel to start with, which no one wants at half its present price; yet it is believed that wool will not be released until this is sold. Then there is maize and sugar, both trying to "save their faces," no matter what it may cost the country in over-high prices through this stupid and selfish action.

If our readers think we are speaking too severely on this scandalous state of affairs, they should study the trade journals now making their appearance and read what they have to say on the matter. Even the local authorities, it is claimed, are helping the slump through discouraging the sales. Whilst local taxes exceed in places the rents of the houses, the paths are in so bad a state that they resemble miniature lakes and rivers in some places. This causes people to pass quickly or walk in the road; it does everything but entice them to linger around the shops and see what else they may buy. This is why, except for the absolute necessities of life, no one but the profiteers and Labour are helping to maintain the consumption of goods. They would like to do so, but cannot. Being splashed with mud and water in the streets naturally does not help. One wonders what would happen in the Colonies if the public, having been taxed for six to ten years for mending the paths and roads, could still point to this necessary work having been left undone—in places. Why should some, i.e., the better-class streets, be done and not all? Where does the unused money go that should have been used on these broken roads and paths?

Tolstoy, we were told at the Russian meeting, warned the Czar in 1904 that if he did not reform the scandals of those days, these same scandals would rise up and destroy him, as they have done. It would be wise if those who are holding up the raw materials of this Empire by discouraging and even prohibiting their sales, directly or indirectly, were to remember this little episode and the subsequent lesson from Russia. If ever serious trouble does come to the planting community abroad or to those now being kept out of employment over here—whether by the trade unions or through wilfully curtailed demand for manufactured goods—it will be no more difficult to point out those who caused the disaster than it is to trace the cause of the débâcle in Russia. And this is what we thought of as Lord Bryce, Mr. Bernard Shaw, Mr. Aylmer Maude and Professor Myliukoff were addressing us at that meeting. Perhaps there were others whose thoughts were as our own.

"The past week," wrote the City Editor of the London *Observer* on December 18th, "has been the worst week on record. Everybody by this time knows the reasons. The fall in commodities . . . the taxation pressure . . . and the trade is receiving little help from the consumer, who holds aloof, and is justified by the fall of raw materials not being adequately reflected by the fall in the price of finished products."

The Christmas Number of *Truth* has again made its welcome appearance, as great if not a greater favourite than ever, judging by the numbers we see being studied at the Clubs, in the trains, or at our friends' houses. It would be interesting to know how the sales of the leading Christmas numbers compare. If we had to stake on any one of them, it certainly would be on *Truth*, especially this Christmas, for at its price —a shilling and a half—we consider it to be second to none in the face of the combined pleasure and instruction concerning recent events that it brings before us at a time when we have the leisure to appreciate the jokes and remember the episodes on which they are founded.

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* "Charity for the poor. Charity in the name of God. Give if you like, don't give if you don't like." Thus spoke the beggar in the local patois outside the Catholic Cathedral in Trinidad, B.W.I. "*Si ous'v'lez bei, bei; si ous pas v'lez pas bei, pas bei.*" This word *bei* (= give) is old-time French.

Experiments to Generalize Agricultural Industries in the F.M.S.

But why leave out Sugar?

Although the slump in rubber is regarded as a passing phase by those who are engaged in the industry, it will take a considerable time to pass—no one can say how long, and will, we hope, doubtless serve to force attention to other forms of tropical agriculture, so that, in future, neither planting companies, the Government, nor local exchequers need be dependent on only one source of revenue. There have always been critics of what they termed the short-sighted policy, both in Brazil and out East, of cutting out everything else in favour of the readily profitable rubber trees; but the future for rubber looked so rosy when this was done, that it is not astonishing if so little heed was paid to the warnings of the critics.

In British Malaya a wise action was taken by a paternal Government to prevent the destruction of coconut trees and their replacement by rubber, and also, later on, both in Malaya, in India, and elsewhere in keeping the coconut "boomer" at arm's length by refusing to allow the native owners to sell out and become landless. Penang formerly was great at sugar production, and one cannot help wondering whether this industry could not be revived as is being done in India, about which a Bangalore friend writes this month, "Progress in sugar production will be more rapid in the days to come. Extreme rates will pass and have, of course, already gone, but normal values, as we knew that term to mean before the war, will not return. The world is changing too fast to do that. The world-output of cane and beet sugar may be higher this year, but at the outside only 17,500,000 tons can be looked for, whereas, on a pre-war basis so far as demand is concerned, we need 22,000,000 tons. Even when the world settles down prices must keep up therefore, until we reach that figure, and this fact still causes sugar to stand an easy first among crops to be pushed on with for some years to come." The Agricultural Department of the F.M.S. for some years has also been carrying out experiments in the hope of stimulating attention to new cultures suitable for a tropical climate. We have seen no suggestion that the sugar industry will be re-introduced and encouraged, but we trust this crop has been included in these experiments now that India has gone ahead with that crop. Reserves for large scale experimental work on crops other than rubber have also been made in the whole of the four States. It was proposed to commence work on the Selangor station this year. This reserve comprises about 2,500 acres, and is fairly easy of access from Kuala Lumpur.

Experiment has shown that the African oil palm can be grown successfully in Malaya on a commercial scale. The Government, we are now told, is reserving large areas of land exclusively for this crop in the Federated Malay States, and these will be given out on specially favourable terms. In the neighbouring State of Johore a considerable area is being planted with oil-palms. This statement should be put alongside what was said on p. 166 in our last issue.

Land in the neighbourhood of Gunong Angsi, in Negri Sembilan, and Ginting Sempah, in Selangor and Pahang, has been reserved for the cultivation of cinchona. Inquiries are being made as to whether it is advisable to arrange to manufacture quinine locally or to export the bark. The profits on this crop are, however, uncertain. Java and India have rendered it so until it has become an industry more suited for Government enterprise than private capital. The cultivation of castor oil on a commercial scale has been undertaken by a number of estates, and the crops showed that good soil was essential for the production of satisfactory results. Except with very high prices, it is considered that this crop is more one for the smallholder than for the estates. Mr. Lewton-Brain, the Director of Agriculture, reports that ipecacuanha plants in the Gardens continued to grow well, and several thousands of root cuttings were sold. A considerable amount of planting material was distributed and information supplied on the cultivation of patchouli. The Brazil nut continues to do well in Malaya.

The Department reports that the *Aleurites montana*, a species of tree growing in China and contiguous countries, does well in the Federated Malay States. It is from the *Aleurites* that Tung or Chinese wood-oil and candlenut oil is obtained in large quantities, some details in regard to it are published in the *Agricultural Bulletin* issued by the Department. Tung oil belongs to the class of vegetable oils known as drying oils, and is thus similar to linseed oil, and can be used for similar purposes, such as the manufacture of paints and varnishes or in the making of linoleum. Since the drying properties of the oil are not as good as those of linseed oil, care must be taken lest it should be used largely as an adulterant of linseed oil. In 1906 nearly 29,000 tons of Tung oil were exported from Hankow, in China. It is stated to be the quickest drying oil known, but inferior to linseed oil on account of its opacity and the elasticity of the skin produced in drying. It is used largely in China as a natural wood varnish and waterproofing material.

Writing about the economic development of San Domingo, a correspondent claims that the tobacco produced in the island is as good as that grown either in Cuba or Porto Rico, but whilst San Domingo is careles and slipshod in her methods of preparation, Cuba and Porto Rico prepare their tobacco to the highest standard possible and in ways best suited to those buying the crop.

The *Confectionery Journal*, of London, recently published two long and detailed articles on the cacao crop of San Domingo showing what it does produce and what it could do. Apparently the information is based on what our friend Mr. Felix Camps bas to say on the matter, but in any case the articles are worth filing. Messrs. Maclaren and Sons, of 38, Shoe Lane, E.C., are the publishers, and the two issues with postage, if still obtainable, only cost 8d. or 9d. post free.

Writing to us on the matter, Mr. Camps said that against the present maximum output of cacao in San Domingo—say 48,000,000 lb.—if science and care were utilized an output of three times that quantity would be possible. One wonders who would buy the cacao now.

Are Mechanical Tractors a Failure in the Field?

ACCORDING to Mons. C. Julien, or Captain Julien to give him his military standing as a Staff-Officer—"After the number of years during which tractors have been on the market, the evolution of apparatus in the various countries in the world for cultivating the land by mechanical means makes it evident, at least from the practical agricultural point of view, that the chief difficulty in the way of realizing ideal results lies not only in the quest for better engines, or even in securing suitable (financial or otherwise) fuel, but also and especially in the conception of an ideal apparatus having a motive force, of whatever source and power it may be, which can give the maximum amount of really useful work on a commercial basis, and thus prove beyond controversy that the mechanically propelled, i.e., tractor-drawn ploughs, pay both in the quality and quantity of the work done.

To be precise, according to the English translation of Captain Julien's article in the well-known *Review of the International Institute of Agriculture* at Rome, it seems, as we stand to-day, that the possibilities of the output of motor cultivating machines are of less importance than the makers would have us believe for several reasons in connection with the machines' ability to get over the ground. Well-thought-out illustrations accompany these criticisms, and the entire article, which covers twenty pages, should be carefully studied by anyone thinking of purchasing a tractor. One result of the information given is to leave us some idea as to why makers of tractors are so unwilling to advertise them. It would seem that certain drawbacks have to be overcome before there will be that general rush for tractors that we are all anxious to see.

Dr. E. J. BUTLER reminds us in the *Agricultural Journal of India* that Mr. J. Mackenna, M.A., C.I.E., &c., resigned the dual post of Agricultural Adviser to the Government of India, and Director of the Agricultural Research Institute of Pusa to become Development Commissioner in Burma, where he was formerly, in 1904, Director of Land Records and Agriculture. We congratulate Burma on the appointment. If anyone can help "wake Burma up," in conjunction with those who have been fighting so pluckily to do so, it should be Mr. Mackenna, who, on taking up the appointment, also resigned the Presidency of the Indian Sugar Committee, and was succeeded by Mr. F. Noyce, the Vice-President, in that position.

According to the latest news to hand, information has been received by Sir Francis Watts in Barbados, from the Secretary of State for the Colonies, to the effect that he considers that the promises and prospects of support received are sufficient to justify his proceeding with the necessary steps for the establishment of an Agricultural College in Trinidad. It is also stated that the College Committee has been reassembled. The Secretary of State has informed the Commissioner that he has communicated this information to the press.

Trade, Politics and Finance.

THE *Times of Ceylon*, from December 1st, asks its friends when writing to their London office, to note that their new address will be Blackfriars House, 19, New Bridge Street, E.C. Their new home will be in the handsome and roomy building being erected for Messrs. Spicer Brothers, the big paper dealers. It is quite close to the Blackfriars Station on the Underground, and next door (or nearly so) to de Keyser's Hotel, now the property of the Lever Combine, who will be moving in there, and thus centralizing their many concerns under one roof as soon as the necessary alterations can be made. And so the world wags and firms move here and there.

We have to thank our old friend, Mr. Takekuma Okada, M.A., the chief secretary of the Yokohama (Japanese) Chamber of Commerce, for adding to the many interesting souvenirs he has from time to time sent us of the progress being made in his city. Now we have received postcards and specimens of their new Commemoration stamps in connection with the taking of the first census of Japan on October 1st. These are the 1½ *sen* (mauve) and 3 *sen* (carmine), whilst on November 1st two other stamps were issued to commemorate the consecration of the new temple built in honour of the late Emperor Meiji.

Talking of stamps reminds us of something far less agreeable than receiving presents. So far as we can ascertain (but we must own our information is scanty; we only wish it were entirely wrong), it has been decided at the meeting of the Universal Postal Union in Madrid to double the rate of postage on all international correspondence. If anything else was needed to put the break completely on international commerce, this small detail will surely prove effective. Yet few know of the change, and even we cannot yet say when the new rates will come into force. Besides increasing the cost of each letter, the weight for the minimum amount is to be reduced, so it seems. Hitherto we paid 25 centimes (French), or 2½d. English for an ounce; we are to pay 50 centimes for 20 grammes = 7-10ths oz., and 25 centimes for each additional 20 grammes. Thus, the London *Daily Telegraph* tells us, taking our unit of weight as 1 oz., an ounce letter to France will cost 5d., and 2 oz. 7½d. It will also cost us, in the United Kingdom, at the present rate of exchange, to send a letter to France, double what it will cost the French to send a reply of equal weight. No wonder the poet sang, "Oh, what a happy place is England." Think how cheap it will be to write from Poland or Germany. It is not fair to include Russia, as you might have to send twenty letters before one arrived. On the other hand, if it is to cost us double the price paid by the letter writers in France, how much more will it cost when we write to Russia, Poland or, let us say, to Vienna, compared with what letters from those centres will pay to come here?

And now coming to other matters, those which make this question of increased postages, as well as increases in rates, taxes and overhead charges so menacing, whilst our values of foodstuffs and agricultural produce have no bottom left in them. Perhaps a couple of months ago, one of the American papers

was calculating the loss to the United States along through the slump in the prices of farm staples, i.e., foodstuffs, cotton, &c. It was worked out at $5,000,000,000, or something like $5 a head on every one of the 110,000,000 men, women and children over there. When you look nearer home it must be as bad or worse, and yet, as stated in our leading article, everything is still dear to the householder, i.e., the actual consumer (whom we wish to see consume all he can possibly buy, so as to increase trade and reduce stocks), and in many cases dearer. No wonder even America talks of bankruptcy for the many and huge fortunes for the few. "The more the situation is studied, we are assured," *Industry* (U.S.A.) tells us, "the more clear it becomes that within a twelvemonth the present reaction threatens to make conditions in the cities worse than on the farms . . . the end of the golden age is past, and this fact must be recognized, for the end is already in sight, and capital and labour alike must adjust themselves to the change."

Meanwhile the planter up-country, in the tropics, or his agent at the shipping port must, it appears, continue indefinitely to sit up and wonder when the wedge which is clogging progress will be removed, so that they, the producers so anxious to sell, can get their produce through, via the factory and the railways, to the consumer equally anxious to buy—yet neither of these extremes can trade because of someone or something in the middle.

Take the present prices of the various commodities which we have quoted regularly in this section throughout the year, especially cotton, which has come down with a thump that rivals, if it does not exceed, the fall in sugar. With the latter, however, the public have had some consideration shown, but not so with cotton; the quality of anything with cotton in it is as bad and as dear as ever, whilst the quotations for this and other products, all out of our own columns, show the serious average fall in each commodity. Those who specialize and go into details will find these rates are rather above than below the buying market's views.

Coming to details, our last advices from Brazil show much concern as to the future of coffee. There can be no improvement until there is a better demand. Again, therefore, the query comes: When will there be a better demand? Our own Colonial producers should not feel this so much, since they in Uganda, East Africa, Mysore, Jamaica, &c., produce better coffee than that from Brazil, and the quantity not being so immense in comparison with the steady and slightly increasing demand for good to fine teas and coffees, such men should still do well. This was the case during the time of the slump when Brazil turned out over 19,000,000 bags; on that occasion really fine coffees actually moved upwards, whilst fair to common went very low. Europe was considered, as far back as mid-October, "to be in the market," and so prospects, it was hoped, would improve, certainly not go worse. Judging by London, the Santos market is steady with 3s. difference between buyers (50s. 6d.) and sellers (53s. 6d). The next public sales will be on January 6th. Meanwhile Nairobi peaberry sold up to 113s, and fair to good greyish 90s. to 104s., Uganda peaberry 101s. 6d., and good bold 85s. 6d. to 86s. 6d., East African 47s. 6d. and 48s. 6d., Nyasaland peaberry 121s., fine bold 139s. 6d., fine middling 105s. 6d. Good to finest teas met with demand and secured fairly steady prices. Cotton is at 11.33d. for middling, forward quotations being much the same. With sugar, Tate's Cubes are now quoted at 84s. per cwt., just 9d. per lb. West India crystallized are worth 66s. to 72s., and White Mauritius 79s., against 80s. for American granulated. T.N. shellac stands at 450s., and AC. hard cakey at 460s. spot; futures much lower, under 300s. Manila hemp is at 58s. to 59s. as its top price, against 54s. for New Zealand. Tin is around £223, and copper £77 to £78.

The following is a comparison of the principal points in the returns of the Bank of England at the present time and the corresponding week of last year:—

December 11th.	1920	1919
Bank Bullion ...	£125,877,511	£91,659,648
Reserve of Notes ...	12,113,230	20,165,210
Private Securities ...	72,180,016	77,073,580
Notes in Circulation ...	130,411,055	88,583,615
Rate of Discount ...	7 per cent.	6 per cent.
Price of 2½% Consols ...	44⅛	50¾
Price of Bar Silver ...	38⅞d.	78¼d.

AVERAGE PRICES (WITHOUT GUARANTEE) QUOTED IN LONDON ABOUT THE MIDDLE OF EACH MONTH.

	Silver per oz. d.	Sugar Free market per cwt. s. s. d.	Rubber Crepe and Sheet per lb. s. d. s. d.	Copra Ceylon Tons £ s.	Coconut oil Spot. per ton Ceylon £ Cochin £	Cotton Mid. Amer. per lb. d.
Jan. ...	77	98 to 114 6	2 7 to 2 8	73 10	114 to 116	27·66
Feb. ...	88	100 ,, 120 0	2 9 ,, 2 9¼	73 10	116 ,, 120	27·67
Mar. ...	70⅝	100 ,, 120 0	2 3¾ ,, 2 4¼	67 10	111 —	26·80
April ...	67¾	80 ,, 114 0	2 1¼ ,, 2 1¾	58 0	97 —	25·96
May ...	58⅛	up to 150 0	1 10½ ,, 1 11	59 0	101 ,, 115	25
June ...	51¼	up to 160 0	1 11¼ ,, 1 11¾	46 0	94 ,, 107	25·54
July ...	52½	138 ,, 145 0	1 10½ ,, 1 11¼	48 10	77 —	23.71
Aug. ...	59¼	120 ,, 138 0	1 10 ,, 1 11½	56 0	89 to 105	24·80
Sept. ...	59¼	95 ,, 119 6	1 5½ ,, 1 7½	58 10	95 ,, 105	19·65
Oct. ...	53⅝	95 ,, 110 0	1 4 ,, 1 6½	54 0	92 ,, —	15
Nov. ...	49⅞	78 ,, 94 0	1 0 ,, 1 0¾	52 0	90 ,, 100	14
Dec. ...	44⅛	66 ,, 80 0	0 11 ,, 1 0	37 10	85 ,, 99	10·33

The London Cocoa Market.

BY THE EDITOR.

MUCH has happened of importance since our last appearance. Fine Grenadas suddenly fell to 60s., and now are hard to sell even at that rate, whilst fair fermented Accras are in the same state at 39s. Compare these rates with those given month by month since June, then realize the surplus of raw cocoa that exists from this, the 1920 output, and which will not

move, whilst the first fruits of the new crops are already coming in. Having done this you will, like everyone else, regret that there is such a slump in the demand for the manufactured goods, and wonder what we shall all be feeling like in three or six months' time if things continue as at present, and we still have heavy "carrying-overs" of the 1920 output of cocoa with the 1921 crop coming in, as fast as it can, to be piled up on the top of that. Will those who control the manufacture and trade, i.e., the making and setting up of goods in this country, still be persisting in making the cost to buy too heavy for the general public's pockets?

Leaving this painful subject—painful because, in these days, there is no saying to what lengths the cupidity of selfishness will go, so long as those exercising it feel themselves secure in the saddle and safe from competition—let us look farther afield. A note has just come in from Professor Urich in Paris on his return from San Thomé. We are sorry to hear he will not be coming to London, as there is a good deal he could have told us about San Thomé and other matters affecting the cocoa world, but since this is not to be, the following particulars are worth noting: "I had hoped," wrote Professor Urich, "to see you again before I left, but the unpunctual running of the San Thomé steamers has robbed me of an entire month and rendered a visit to London impossible. All I can do is to catch the Dutch steamer for Trinidad from Boulogne on the 9th.

"I cannot give you full particulars now, but the crops of San Thomé have been very badly hit by abnormally dry weather, as well as by thrips, algal disease and through insufficient cultivation and shade.* The soil is good, and some parts of the island are well watered and so can stand a little drought.† When I left there were 120,000 bags of cocoa waiting to be shipped, an accumulation of three or four months. The estates are very large, and the labour supply is not what it was; furthermore, it tends to diminish every year. When I was in Lisbon I heard rumours that the 'slave-grown question' had come up again, and was even to be brought before the notice of the League of Nations, now sitting at Geneva. Later on, when I reach Trinidad, I will give you more news."

It will be remembered that attention was called to the labour trouble in San Thomé at the foot of p. 175 in the last report (November), but since then the *Confectionery Journal* of London published the following statement on the subject (see what their correspondent in the Mincing Lane and Overseas market report for November 25th said on p. 595): Here is a portion of what was said:—

"If the Gold Coast's industry has a skeleton in its cupboard labelled 'neglect of plantations,' its neighbour, San Thomé, has a far more serious one in its shortage of labour. It is impossible, apparently, to get satisfactory returns of this island's and of Principé's total cocoa exports month by month, but anyone who has followed the progress of the industry in these Portuguese islands must feel that the prime of their output has been reached and passed. Damp and unhealthy as the islands may be, the latest returns showed a diminution in the average rainfall of $1\frac{1}{2}$ in. or $2\frac{1}{2}$ in. since the big clearance of the original estates and the planting of the comparatively widespread areas now under cocoa. Once such a shrinkage sets in it increases at a fairly rapid rate. A drier San Thomé would be much pleasanter for the residents, but not for those heavy yields per tree that the more favoured estates are said to give. To-day, I believe, considerable areas are under cocoa that should not have been planted; it would have been far better (in comparison to the smaller yields secured) to have left these areas with their original forest growth. Now, of course, it is too late, and San Thomé is striving to make the best of a bad job, but is she going the right way to do so?

"These less remunerative areas, of course, need labour the same as, and probably more than, the most fertile estates, but just now, when the labour hunger seems to have again got San Thomé by the throat, these barely productive areas must be quite a grievance to those lucky enough to be farming the best lands. Like a people besieged, the healthiest and strongest must often wish to throw the others over and so have more for themselves. What will be the end of San Thomé on this point remains to be seen. Leading manufacturers and others on this side will watch the position closely.

"Meanwhile, I hear that the anti-slavery community are out on the warpath again. It is not my business here to trouble as to which side is right or wrong in this interminable controversy, but I am interested in the matter, for I feel certain that if there is any truth whatever in the statements one hears, then indeed San Thomé must be in a sorry plight for its labour, and their decrease in production will be accelerated, especially if disease or pests attack the trees possibly because of insufficient attention through the lack of labour to prune and spray them."

All the big centres have their troubles—Bahia, San Thomé, Ecuador. What a crop there will be when all goes well with everyone. It can only be supposed that a merciful Providence is tempering the lamb to the winds of adversity by naturally cutting down the output of raw cocoa, ample as supplies in the aggregate seem likely to be, until the world needs it all. At present this is not the case.

As already stated fine Grenadas have been broken down and sold at 60s., whilst 39s. is now the value, ex-quay Liverpool for fair fermented Accras. If these rates do not arouse interest in your minds, then refer to previous issues and see how prices have fallen. Furthermore, whilst substantial transactions have been done on this basis, further sales seem impossible—except at lower rates. "How much lower do you want us to go?" one seems to hear the planter say. "We are still producing at the top of the market so

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* This last trouble surprises us. Taking into consideration all one has heard and seen in print and in photos it would have seemed on the whole that more light and air were needed. Perhaps the trees themselves are planted too close together and so, whilst this would not prevent their crowns from needing protection, it would cause trouble on account of the lack of air and light below.—[ED. *T.L.*]

† But not so everywhere, and this is why certain areas, including some of the latest estates, have been planted when it would have been wiser for the Island and more remunerative for the planters to have left the land in forest.

far as the cost of everything, food, appliances, transport, charges and interest, &c., are concerned, and yet you have placed us at the very bottom of pre-war sale returns and still are not satisfied." To such folks we suggest that they study our leading article in this issue (p. 185). Meanwhile let us run through the reports as published in Tropical Life this year, and jot down prices and the total stock of all growths month by month. Here are the figures, jotted down roughly:—

Extremes of value in mid.	1 s.	2 s.	3 s.	4 Tons
January	122 to 132	122 to 130	82 to 104	45,050
February	125 ,, 131	120 ,, 131	108 ,, 116	40,950
March	138 ,, 147	124 ,, 139	107 ,, 127	45,550
April	137 ,, 146	120 ,, 132	105 ,, 118	48,450
May	133 ,, 140*	115 ,, 125*	85 ,, 95	50,345
June	120 ,, 130*	112 ,, 120*	75 ,, 82	61,600
July	100 ,, 110	90 ,, 100	55 ,, 75	67,600
August	95 ,, 105	85 ,, 95	55 ,, 67	72,700
September	80 ,, 90	75 ,, 85	52 ,, 67	74,050
October	75 ,, 85	65 ,, 75	50 ,, 63	69,350
November	75 ,, 85	58 ,, 70	40 ,, 55	63,450
December	up to 80	up to 59	F.F. 39	53,500

1—Trinidads. 2—Grenadas. 3—Accras. 4—Stock of all growths in U.K. at the end of the previous month.
* Prices nominal.

Probably anyone could quibble over these prices, but they are good enough to give some idea as to how much values have dropped and when they were at their highest. Even now it is difficult to talk with assurance as to values, for a sale is made, and the moment after that is known the next buyer (of an important quantity, 500 or 1,000 bags) immediately wants to go still lower. You can therefore only value on this basis in your mind (I do not feel inclined to do so in black and white) until the next transaction has taken place and the price is known.

Coming to real facts—if there are such things on paper in these days—we will discuss the Board of Trade returns, stocks, &c. Take the Board of Trade returns first. During November our imports were very small, 1,562 tons only, against 2,800 last year, and just over 6,000 in 1918, when the war was on. This may be a good thing in face of our ever increasing stocks, but it is a bad thing for the trade of this country and for those dependent on that trade for their wages and living. Last month I also had to call attention to the small receipts—3,000 tons in October (see p. 176). Our November deliveries for home consumption were 834 tons less than in 1919 (4,638 against 5,472 tons in 1919), but this was more than balanced by the increase in the exports of 1,400 tons (6,045 against 4,650 tons). Here are the totals for the eleven months:—

Board of Trade Returns for the U.K.—January-November.

	Landed Tons	Del'd. H.C. Tons	Export Tons	Stock Nov. 30th Tons
1913	31,576	25,154	6,304	8,850
1918	31,926	56,433	584	18,150
1919	109,266	58,089	23,378	47,600
1920	100,390	47,060	41,485	53,500
	Decr. 8,876	Decr. 11,029	Incr. 18,107	Incr. 5,900

If you look back at last year's stock on November 30th, you will see that it was given as being 51,700 tons. Since then corrections have reduced it by 4,100 tons, and no doubt the same will be knocked off the present stock before the Government statisticians pass it as quite correct. This is always so, and should be borne in mind when one wants to be as accurate as possible. The foreign manufactured trade cannot be ignored in these days in face of the falling demand for the home-made article. The planter, of course, is glad to see this, since it shows that the United Kingdom as a consumer is not so bad as her own figures would make you think was the case. For the workers over here, however, it is hard lines that if cocoa powder and chocolates are wanted, they cannot be made at home. Here are the last two years' returns for foreign manufactured:—

Foreign manufactured cocoa trade with the U.K.

Jan.-Nov.	Landed. Tons.	Del'd H.C. Tons.	Exported. Tons.
1919	8,826	7,269	8,913
1920	15,096	12,830	8,880
	Incr. 6,270	Incr. 5,561	Decr. 33

Coming now to detailed stocks, London on December 18th had 204,571 bags on hand as under:—

London Stock, December 18th.	1920 Bags	1919 Bags	1918 Bags	1913 Pre-war
Trinidads	29,786	26,072	20,092	9,496
Grenadas	21,441	14,310	7,077	4,705
Other W.I.	12,468	4,942	1,513	3,198
British African	9,521	22,533	18,395	5,458
Portuguese African	649	23,541	28,516	6,129
Cameroons	1,378	2,268	1,319	2,561
Ceylon and Java	19,186	7,280	8,468	9,022
Guayaquil	72,781	8,307	16,575	18,989
Bahia and Brazil	1,183	2,431	1,380	1,563
Other foreign	36,178	8,930	4,423	9,230
Totals	204,571	120,614	107,758	70,351

Liverpool—during January - November — received 1,159,513 bags, and delivered to all destinations 211,215. This must leave her with 948,300 bags somewhere against the stock in bonded warehouses on October 31st, returned at 343,000 bags. In 1919, during the same eleven months, she received 1,065,484 bags and delivered 131,000 bags.

In a week from the day these notes are being written we shall be in the middle of the Christmas revels. May there be large supplies of chocolates everywhere. That is my wish, but I am afraid that I should be very disappointed if *Un Diable Boiteux*, as in Le Sage's book, took me round and showed what each house had purchased. In the well-to-do families no doubt excellent chocolates will be there in plenty, and probably other grades in the well-paid worker's home. The man with the white collar and the black coat, however, will not be buying, I fear, as fully and as fearlessly as he should be doing if ever life is to creep back into the market again.

At present it is indeed lifeless. The great barometer, viz., Accras, shows a fall in the weather which certainly, if it goes much lower, is bound to bring storms somewhere. Not long ago it was thought that 50s. was low enough, but now we are under 40s., and seem quite reconciled to such a price. In face of such a market and such a price for Accras, what is the use of trying to fix values on the others? Sales now and then, no doubt, are made, but in such small quantities that no one can trust them. Since my last report, however, I have to add that a big drop was brought

about in Grenadas. We were grumbling at them then, saying they were needlessly low at 68s., then they were put at 65s. until—one day we came to town and found that over a thousand bags had changed hands at 60s., and one small man to clear even took 59s. It was quite a shock, but what was there to be done? The new crop is on us already. Furthermore, Accras were then at 47s. against 39s. to-day. Those who still have Grenadas on hand, and there are plenty to be sold, would only be too glad to sell on the basis of 60s. for fine. On December 11th, out of the total London stock of 210,282 bags, we had 29,900 Trinidads, 21,656 Grenadas, and 13,819 Other W.I., making 65,400 bags in all; it is time, therefore, to be getting on.

I would like to give values for Guayaquils, for San Thomé and Bahias, but I am not good at guessing, and others can do so better than I. The two last, however, since we are bare of supplies (23 San Thomé and under 1,200 Bahias, good, bad and indifferent) are selling out of proportion to Grenadas. But then you must still find a buyer.

Havre and Bordeaux seem the same as ourselves—plenty of sellers and but few buyers. Prices when mentioned show a troublesome gap between the ideas of the two, and so there is nothing doing to write about. Marseilles says the same, whilst Messrs. Grace and Co. write from New York that with a still further decline in exchange from Brazil and reports that the Accra crop will be as large, if not larger than usual, the American cocoa market has continued to decline, reaching a new low level. This was at the end of November.

Meanwhile the arrivals of cocoa at New York continued to be unusually large. I noticed that during the week ending November 10th, out of 66,270 bags shipped from Bahia, 40,000 were for New York. The prospects of such arrivals were further depressing the American market, so perhaps, after all, our receiving only 4,500 tons during October and November is an advantage—to the producers and others with cocoa to sell over here.

Havre during November received 10,400 bags and delivered 29,616. Like London, therefore, her stock, although still ample, moves in the right direction. Here are Mons. Anthime Alleaume's figures for the month:—

Havre's Stock, November 30th.

	1920 Bags	Value Fcs.	1919 Bags	Value Fcs.
Pará	7,095	180 to 193	11,055	212 to 225
Bahia	41,353	157 ,, 193	20,285	215 ,, 230
Venezuela ...	25,929	218 ,, 296	17,942	245 ,, 295
Trinidads ...	51,921	195 ,, 198	22,692	244 ,, 248
Grenada & O.W.I.	10	170 ,, 188	4,032	225 ,, 245
San Thomé ...	41,561	147 ,, 183	24,261	195 ,, 230
San Domingo ...	44,320	160 ,, 170	3,425	210 ,, 220
Haiti	36,745	130 ,, 170	14,413	175 ,, 195
Accras ...	29,207	156 ,, 160	58,039	195 ,, 200
Guayaquils ...	13,189	235 ,, 255	73,374	230 ,, 245
Others ...	27,930	—	3,256	—
Totals	...319,260 bags		252,774 bags	

The exchange just now is worse than ever for France, especially when compared with America. On December 11th the £ sterling was only worth $3.45, but it took fcs. 58.50 to equal either of these amounts.

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